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J. C. Gilman, Secretary
Iowa State College

The Usefulness of Science
XVI. THE USEFULNESS OF BIRDS

by

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from

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Several years ago an old gentleman of 80 years told me that as a boy he had been encouraged to kill all birds that came to his father's orchard. Many people believed then that birds destroyed much fruit and thus were harmful to men's best interests. They did not realize that birds could be of considerable service to man in their eating of insects that might have destroyed a larger amount of fruit than the birds ever cared to take.

Ere long insects increased and more weeds were brought in to hinder the crops. Soon men began to see the birds eating weed seeds and harmful insects. They reasoned that all such eating was good and from observations of the contents of the digestive organs of birds scientists and farmers learned that the feathered creatures were no longer foes but true friends. Such facts were given wide publicity through the magazines printed by bird lovers, bulletins issued by the state and national governments and many lessons taught in public schools. Then our citizens placed such a high value on many of our birds that they no longer begrudged their friends a little fruit and a few grains of the plentiful cereal crops.

Since nearly all of our soil has come under the plow and the hoof the nesting sites for birds have been decreased so much as to alarm many bird admirers. They very properly continue to remind us of the usefulness of birds that eat insects and weed seeds. Let us consider then the problem of birds in relation to pest control in the present day of our state's history. The bob-white quail that we all care for so much may serve as a first example in our discussion of the problem. Many hunters as well as scientists can truthfully testify to finding one hundred, two hundred and even three hundred chinch bugs in the digestive organs of a bob-white. And let us rejoice because the bob-white does eat chinch bugs. More power to the bob-white! But let us not expect too much from him nor more than he has power to accomplish.

Last summer in a number of grain fields of southern Iowa I saw several millions of chinch bugs on each acre of ground. I saw acres of corn plants, each a foot or two high, from each of which over 100 bugs were sucking out the sap. Those plants wilted and fell dead before many days had passed. Also my observations in the same counties together with those of experts from our state fish and game department lead us to believe that southern Iowa has the largest number of bob-whites it has known in the past 30 years. But they could not eat all the chinch bugs. We believe that under the most favorable conditions and care there will not be more than one bob-white per acre on a farm in southern Iowa, or, in other words, not over 160 bob-whites will live year after year on 160 acres of land. Now it would be very unfair to expect one-bobwhite to eat a million chinch bugs in one summer.

And let us be reasonable with the downy woodpeckers that come each winter to eat codling moth larvae from the bark of our apple trees, with the robins who take cutworms from our gardens and the blackbirds that follow our corn cultivators and can hardly wait till the shovels turn the soil over to get at the wireworms and the white grubs. Most certainly they do a great deal of good though our insect pests are often more than the

birds can master. We must assist with certain cultural practices and chemical poisons in killing insects.

Then as to weeds let us realize their control is a bigger job than the feathered friends can finish. The numerous tree sparrows each winter in Iowa eat at least 875 tons of weed seeds. And their various relatives no doubt help to eat 1000 or more additional tons of the same food that would otherwise have grown into millions of harmful plants. But we know that quack grass, Canada thistle and several such undesirable plants have increased and spread quite widely. We are happy that tree, song, lark, white-throat and a dozen other sparrows as well as goldfinches, mourning doves, meadowlarks, horned larks, bob-whites, pheasants and at least 50 other birds eat so many tons of weed seeds. We deeply appreciate their assistance. But they can not alone control our harmful weeds.

In addition to the insect and weed seed destroying brigades of our feathered friends we have a company of large strong birds that act as scavengers to destroy garbage and to dispose of the carcasses of deceased animals. You see many times a few crows devouring a dead rabbit on the pavement. Particularly along the Des Moines River south of Boone, in the neighborhood of Ledges State Park, I see occasionally a few soaring birds with necks longer than crows that are turkey vultures on the wing in search of carcasses of animals which they use as food. If we were to haul all dead domestic animals out into the open and expect crows, vultures and their friends to dispose of the bodies quickly we would be unfair to those birds. The job would be too large. And it would not be safe to leave unburied very long a hog that had died of cholera. Not that vultures would feed on it and spread cholera, but lest other hogs find the carcass and contract cholera directly. Let us not accuse the crow and the vulture unfairly of spreading disease among our domestic animals without positive proof, which we are as yet lacking. Rather let us permit the crow and the vulture continue to dispose of small animal carcasses in the wild which we could not afford to take time to bury. When crows become too numerous, as at present in Iowa, they injure crops and other birds, then the crows may be thinned out.

A fourth service that certain birds such as hawks, owls and shrikes perform for man is the destruction of rodent pests--mice, and several kinds of ground squirrels, particularly. These rodent pests are very difficult to control. The mice in corn shocks during winter often spoil much grain and in alfalfa fields they tunnel and feed to destroy many plants. Last fall, with the aid of field glasses and my auto, I followed a marsh hawk as it flew systematically along rather definite paths across several fields throughout a whole afternoon in search of harmful mice and squirrels. About each 15 to 30 minutes it would pass low and quietly over any given spot in search of its prey. I saw it make several strikes in the field and catch its food. And I saw the same bird several times during the afternoon fly low over two yards well-filled with chickens. Neither the chickens nor the hawk troubled each other at all.

Now let us be fair with the hawks, owls and shrikes. Each

when very hungry is apt to try to take whatever food it can catch and handle. Small birds, such as the sparrow hawks, only about as large as a robin, would not try to catch and carry away a full grown chicken. Large hawks, such as the red-tailed and red-shouldered, occasionally are so hard-pressed for food that they visit the chicken yard. I once saw a hen with a brood of little chicks fly up and fight back against a marsh hawk. The hen was the victor in the fight and the marsh hawk flew away in search of other food. Once I saw a Cooper's hawk drop out of the sky, seize a half-grown chicken in a small flock that I had just fed and carry it away before I could think, "I wish I had a shot-gun." Yes, hawks take some poultry, some game birds and some song-birds. But, if we disposed of all our hawks and owls, or should we lose many more of their present numbers, mice and ground squirrels left to increase, would soon do a great deal of damage to our crops.

Let us try then to preserve our hawks and owls for the most part. Control of mice and squirrels with poisons and guns would cost far more than the value of the little poultry and the few other birds taken now by the hawks. The hawks save us lots of work and money. If a red-tailed hawk began the habit of taking my chickens, I would get the shot gun and let him have a few shots at a long range just to remind him to go hunt mice and ground squirrels which I do not protect. In that way red-tailed hawks and I have come to a better understanding several times.

Among the several values of birds may we next suggest that birds as game and for food stand out very highly in the minds of many citizens. In recent years many of our game birds are decreasing so rapidly that we have in a feverish manner enacted many laws to protect the remaining game birds and have desperately tried to replace the lost species with other birds from distant places. To Iowa we brought ring-neck pheasants and Hungarian partridges to substitute for prairie chickens. So far the pheasant has done quite well in northern Iowa. It is more slowly increasing its numbers in the grassy low places of southern Iowa where it will probably continue in some numbers but not in so large numbers as in northern counties. The bob-white has such brushy cover and weed seeds as food for winter in southern Iowa so they are quite numerous in many townships. But in northern Iowa we can not expect to ever see sufficient brushy cover for the needs of many wintering bob-whites.

According to present regulations under the direction of the State Fish and Game Department the pheasant and the bob-white become the main upland game birds in Iowa and only a certain surplus of these birds may be taken off at any shooting season. The regulations with respect to bob-whites will operate in this manner. Let us say a certain farm of 160 acres has 90 bob-whites in autumn but only brushy cover and food for 60 bob-whites to last all winter. Then in November, the farmer willing, 30 bob-whites might be taken off to leave 60 bob-whites well cared for throughout the winter. Experimental studies carried on by experts for several years have shown that if all bob-whites were left to try to spend the winter where there is cover and food for only 60 birds that about 30 quail would perish of starvation

or, weakened, would be caught by hawks, owls and other enemies. Hence the shooting of these excess 30 early in winter would not actually decrease the next spring's bob-whites on the farm. Would a farmer try to keep 90 head of cattle all winter in shelter and with food sufficient for only 60 head? No, and the humane laws would not permit it. The Fish and Game Commission suggests that we manage and care for our game as we would other live stock on the farm. Furnish it with abundant shelter of brush and tall grass and food in winter and with grassy nesting sites in summer. Then harvest as a crop the surplus in autumn just as a farmer markets excess hogs and cattle. Then, just as he does with hog and cattle, the farmer should retain an abundant supply of breeding stock of game birds through the winter.

I have not been able to mention very many birds in these few moments nor to tell many facts about any one of the 364 wild birds of our state. I have merely suggested that we should continue to protect the many birds that eat insects and weed seeds though they take a little fruit and grain, and that with our intensive agriculture we should not become angry with them and turn our guns upon them merely because they cannot completely destroy the worst insects and weeds. I have pointed out that our Fish and Game Commission has an organized plan of game management which, if carefully followed and remodelled from year to year to meet changing conditions, will provide us with game birds, and also really preserve our bob-whites. From a list of bulletins and books appearing on a sheet at the close of this talk when mimeographed several may be obtained to supply many details I have omitted. Let us agree that though birds can not destroy all our pests they do us more good than harm in their food habits in general, and we can have several species in abundance for game.

There still remains a sixth value that birds supply which many of us rank very highly. We listen to their songes, we see their colors, watch their flight and observe their behavior to furnish us a great deal of pleasure. Before many more weeks we will be awakened each morning by the bird chorus of robins, blue-birds, catbirds, brown thrashers, orioles and many others. Occasionally the first notes of a morning are a little trying. I remember a catbird that each spring morning takes his station in a lilac bush near my sleeping porch. At about five o'clock he starts to growl mee-ouw, mee-ow, mee-ow, something like an old fashioned broken down alarm clock. He pauses in between the mee-ouws long enough to give me time to wish that the bird would be quiet another hour and let me sleep. Thus he and I continue for about 30 minutes; he trying to tune up his creaky song-box and I trying to decide to wake up. Then the catbird starts to sing. He warbles, he trills, he imitates the robins, the grackles and several other birds. He throws in a few sweet notes of his own every once in a while to let me know he can sing when he wants to. Through all this vigorous serenade his voice trembles as though he were so full of song that the notes bumped into each other on the way out. I am waiting for that catbird. I want to hear his 6 o'clock concert another spring. It is just that much more to live for.

Next summer as I sit in my backyard at rest I will see the chimney swifts in the air catching mosquitoes and hear their twitters in between swallows. I shall want to twitter, too, for each mosquito less is one less bite on me. I will see the chimney swifts fly past the old plum tree, break off small dry twigs without a stop in flight and carry them to a tall chimney a few blocks away to glue the twigs together for a nest.

There will be a rose-breasted grosbeak's nest in a maple tree near the front of the yard. The father with a bright rosy breast will come to my garden to eat insects and peas. He will shell a few peas out of only three or four pods in a week. I don't notice the loss. The potato bugs he will eat would have done more damage in my garden. A ruby-throated humming bird will visit the petunias and I shall never tire of seeing his ruby-red throat and watching his lightning darting actions. Goldfinches will come to the bachelor's buttons before the seeds set and visit them impatiently each day until they find the seeds. Later they will like the cosmos and, of course, the sunflower seeds.

Birds you see are a part of my life every day. They are a part of my home. Life is more pleasant and enjoyable because I observe and study birds that are my companions in all my life activities. They are my friends. And we live for friends.

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