INTRODUCTORY NOTE

For this our second bulletin we are again fortunate in having a contribution from Mr. Finley, which is made doubly interesting by Mr. Bohlman's photographs from life. It is hoped that other bulletins may be available later if the appropriation is sufficient. The birds here treated, with the exception of the California Purple Finch, are found throughout this State in winter as well as in summer. Agriculturists and horticulturists should endeavor to find out to what extent birds about their homes are helpful or injurious. In determining the economic relations of any bird, it must be considered from all points of view, and during the entire year or season in which it lives about the locality.

ALBERT R. SWEETSER.
State Biologist.

SOME COMMON BIRDS OF OREGON
With notes as to their economic relation to man
By WILLIAM L. FINLEY
Illustrated with photographs from life
By HERMAN T. BOHLMAN

RED-SHAFTED FLICKER.

The Red-shafted Flicker or Woodpecker (Colaptes cafer collaris) may readily be recognized by the brownish throat and sides of the head, with a black crescent on the upper chest and the breast covered with round black spots. The male has a patch of red on each cheek. When flying away, the flicker may be identified by the snowy-white patch on the rump and the red lining of the wings and tail.

The flicker is rather an odd mixture of woodpecker and robin. He climbs straight up the tree trunk, clutching with his claws and using his stiff, pointed tail feathers as a prop, or he sometimes sits like an ordinary percher. Instead of a chisel-shaped bill like other woodpeckers, his is more like a pickax. He has the long elastic tongue that characterizes woodpeckers, and this is covered with a sticky saliva and is thrust out to catch small insects. Like the robin, this bird often digs and hunts in the ground for ants and worms.

If the flicker was good for nothing else, he would deserve careful protection because he is the persistent enemy of the ant family. He
seems to have been created and equipped largely for this one purpose. Although ants have some use, they are often a great pest. Many kinds of ants are exceedingly harmful. Besides being wood-borers, they infest houses and destroy timber; but the worst of all, perhaps, they protect and care for many aphides or plant lice, which are among the greatest enemies of trees, plants, and shrubs. The flicker also destroys a good per cent of beetles, moths, and other insects. In some of the flicker
stomachs that have been examined by Prof. F. E. L. Beal, of the Department of Agriculture, he says three were completely filled with ants. Two of these each contained more than 3,000 of these creatures, and one contained over 5,000.

I have heard a few horticulturists complain of the flicker for pecking apples and pears. Investigation shows that these complaints come only from a few sections and are in no way general. As a rule, the damage is comparatively small, and, as a whole, the bird undoubtedly does a great deal more good than harm.

The Western Robin (*Merula migratoria propinqua*) is the commonest bird resident about our gardens, orchards, and meadows, and because he is so common, considerable discussion has arisen concerning the amount of fruit he eats. As far as I can learn, the most complaint is found against the robin as a cherry-eater. Cherries ripen early in Oregon, and as it is about the only fruit accessible at the time, the robin’s appe-
tite is undoubtedly sharpened by his long continued diet of worms. I have talked with many orchardists concerning the amount of harm that is really committed by robins. The earliest cherries are bothered most, while those that ripen later are not disturbed to any extent, because of the other fruits and berries that are ripe by this time. The severest complaints seem to come from places where there are just a few cherry trees about a locality, and to these all the robins from the neighborhood seem to go for a feast. In places where cherry trees are abundant, the loss is so scattering that it is not noticed to a great extent. For instance, in an orchard of 1,700 Lambert cherry trees, a few miles east of Portland, the owner told me the robins destroyed very little, if any, fruit.

From the data furnished by the Biological Survey, the table of the robin’s food for the year shows that cultivated fruit is not eaten to any serious extent except during the months of June and July. The amount is 30 per cent during these months, but during the same time the amount of insect food is over 46 per cent, which shows that the benefit exceeds the damage. Scientific research, carried on by the Department of Agriculture at Washington, shows that for their own interests, horticulturists should try to protect their crops during the short season when the robin may be injurious, and let him live to perform his good work of destroying thousands of insects that are harmful to tree and plant life.

Even if the robin was not of real economic value, he surely would be worth something from the esthetic standpoint. What would a June morning mean without the caroling of the robin? He is the boldest bird about our dooryards. He puts himself directly under our protection and builds as near about the house as possible. Who has not watched him hunt for worms on the lawn? As an integral part of a child’s life, we need the robin about our homes, even if he does eat fruit.

There is always some vacant space about a farm where one or more trees might be planted especially for the birds. It is better to let the birds have a few seedling cherry trees, or as birds are very fond of Russian mulberries, a few of these could be planted. These are good bearers and the birds prefer mulberries to cherries. In this way a few trees planted about a garden or orchard would protect more valuable fruit.

**WESTERN BLUEBIRD.**

The Western Bluebird (*Sialia mexicana occidentalis*) may readily be told by the blue coat and the brick-red breast, which changes into white on the lower part of the body. In the East he is known as the fore-runner of spring. But in the West, where the winters are not so cold, a few always stay the year around. They are together in flocks during the day and sleep together at night. The bluebird is one of the birds that has taken remarkably to civilization. He formerly built his nest in some hole of an old tree about the woods, but now he prefers a modern home. He prefers to live in a bird house that is put in the back yard or about the barn, or nailed in the crotch of a fruit tree.

Although the bluebird often lives about the city, I associate him with country life. I know of no better way to cultivate bird friendship to advantage than to put up bird-boxes in various places about a farm. One is sure to have one or more bluebird tenants, and, with a little care, they
become very tame. They not only pay rent in the quality of their singing, but by ridding the trees of many harmful worms. On several different occasions, I have watched the mother and father bluebirds feed their young. In one day's time they have brought in hundreds of green worms, caterpillars, grasshoppers, ants, and other such insects. Over three-fourths of the bluebird's food consists of various kinds of insects.

The bluebird is one of our songsters that is not accused of being injurious. He does not partake of the crops raised by man, although he boards himself about the farm and garden. He is gentle and friendly. If undisturbed, he will raise two or three broods during a season. But like other birds, his numbers do not seem to increase. He should receive careful protection by man, for, like other birds, he has many enemies that we know not of. Many birds die of disease or starve to death during the winter, and many are killed by animals.
Two Blue Jays are common residents through the western part of Oregon. The Steller Jay (Cyanocitta stelleri) may be recognized by its long crest and deep blue coat; upper parts of the body are blackish, changing to rich blue on the lower back and belly. The California Jay (Aphelocoma californica) looks more like the blue jay of the Eastern woods in color; upper parts are blue, except the back, which is dark brownish or black. The bluish on the throat fades into white on the lower part of the body. His military coat gives him distinction from other birds.

A bad reputation in the bird world is as hard to live down, as it is among men. A man's character may be injured by a false report; so a bird is often condemned by actions that are misinterpreted, or on hearsay evidence. The man may find recompense, but the bird cannot. The jay is universally known as a robber and murderer: he robs other nests and he eats nestlings. This report has gone the rounds among men so long that many people think a blue jay does nothing else but hunt up mischief. It is mighty hard to persuade some people that any good can come of a blue jay.

Before we condemn the blue jay, let us consider the real facts against him and weigh the evidence. Grant that one blue jay steals eggs, it is logically false to reason from a particular to a general conclusion and say all jays steal. Professor Beal, of the United States Department of Agriculture, has made a most careful study of the food habits of the blue jay. His results show that 292 stomachs of this bird were examined after being collected in every month of the year in twenty-two different States, the District of Columbia and Canada. The food of the blue jay is composed of 24.3 per cent animal matter and 75.7 per cent vegetable matter. The animal food was made up largely of insects. In all these stomachs, only two showed the remains of birds, one of a young bird and the other of a bird that had likely been found dead. Only three stomachs contained the remains of birds' eggs, and one of these was taken in October and was evidently an old shell found in some nest. In several other stomachs, the shells of the eggs of domestic fowls were found, but the evidence seemed to show that these were old egg shells picked up about farm houses.

It is evident, therefore, that the depredations of the blue jay are not as general as supposed. But here in Oregon some complaint has been made against the blue jay for stealing fruit, and because of its reputation, it is denied protection under the Oregon laws. The injury to fruit by the blue jay seems to be more local in places than it is general. The reports of its destruction have come from places where fruit is not abundant or where an orchard is surrounded by woods and the birds can swoop down, take smaller fruits and fly back to the woods.

As to the home life of the two blue jays here in Oregon, I have never caught either one breaking up the homes of smaller birds, but I know of one case where I was positive a warbler's nest was robbed by a pair of Steller jays. There is no doubt that a blue jay will at times rob other birds, but we need not interfere for the other birds in this case, for
they know how to care for themselves. They hide their nests carefully, and one of the parents is most always on guard about the premises.

One reason that makes me think that the blue jay is often wrongly accused, is that I knew of a Steller jay's nest in a patch of woods. I was of the opinion that these birds did little else but hunt up mischief, so I watched the place carefully. Near by I found the nest of a thrush with young birds in it, and also a robin's nest with eggs. The latter was not concealed and I am sure would have been robbed if the blue jays had wanted eggs, but neither of the jays seemed inclined to mischief.

In another case, where I saw a pair of these jays about my chicken yard, I thought I would catch them red-handed stealing eggs, as one of them was about an open nest that contained a chicken's egg. The bird flew down in the yard and picked up a hazel nut and flew back to the fir, where it held the nut between its toes and pounded it. He couldn't crack it and presently flew off. Several times afterward I saw the same pair about the chicken yard and near the chicken house, but they were merely foraging for nuts and other eatables found about the yard.
AMERICAN CROW.

The American Crow (*Corvus americanus*) is one of our best known bird characters. Like the blue jay, his reputation is bad; it is as black as his coat. It is very true that if a man once catches a crow in the act of stealing grain, eggs, or young birds, it makes an impression that he does not forget, and he is soon persuaded that the habit is universal, and that the crow indulges in thievery all the time. Even though we have never seen an instance of crow destruction, whenever we see this wily, black individual, we are accustomed to think of him as an enemy.

To determine the economic status of the crow, the Department of Agriculture has examined nearly a thousand stomachs of crows killed in every month of the year and all over the country. The bird has been charged with causing injury to the corn crop, stealing fruit, robbing nests of poultry, and eating young birds. On each count, he was proven guilty. It was also shown that most of the corn eaten was waste corn and the part destroyed while growing was only 3 per cent of the total food. The destruction of fruit and eggs was only trivial, while, on the other hand, the amount of harmful insects and mice eaten rendered the final verdict in favor of the crow, for it was proven beyond doubt that he was of more real economic value than harm.

Out of 909 crow stomachs that were examined, only forty-one contained eggs, feathers, bones, or other remains which could be identified as those of wild birds, and some of these were very likely the remains of dead birds that were found. It is doubtful that more than one crow in twenty ever becomes addicted to this sort of stealing. Even if he has the tendency to steal, it is only occasionally that the chance is offered, for other birds are generally on the watch.

No animal food is hunted and eaten more regularly by crows than frogs and toads. Of the 909 stomachs examined, 151 of these contained the remains of frogs and toads. Those also showed that a great percentage of the crow’s food is insectivorous. It is composed of grasshoppers, beetles, cutworms, ants, and various kinds of flies.

Many of the reports of the crow doing damage come from the East, and especially in the spring and winter when the natural food is scarce. Here in Oregon the crows remain with us the entire year, and there is seldom a time when he cannot find abundance of natural food in the woods and fields.

Crows are fond of various kinds of fruits and berries, and where they do not get this supply of food in the native woods, they often frequent orchards, and in some cases in fruit-growing sections of our State have been known to do damage. But where they see cultivated fruit, they are generally very sly in stealing. If one or two of the birds of the flock are shot, the rest are very wary about visiting the trees again.

The crow undoubtedly destroys eggs and young of other birds, but the real amount of damage he does is often exaggerated. He will eat chicken and turkey eggs where the nests are found out away from the farm houses, but where he has been shot at a few times, he seldom comes very near about the premises.

Mice form one of the most important articles of the crow’s food. The crow’s habit of searching the ground for food enables him to find many
mice as he walks along and pokes his nose into bunches of leaves, under grasses and weeds, in the meadows and pastures. Crows are most active in their search during the spring and summer when the hay is cut and when they are likely to find nests of mice that contain young. The crow stomachs that have been taken in July and examined have contained more mice than in any other month. This is a fact that the agriculturist should credit to the crow's account. Even tame crows are very partial to mice, for even when they refuse other food, they seldom refuse these. In a case where several young crows were in a cage together, the bird that gets the mouse will swallow it whole to keep the others from getting it, but later it is generally disgorged and torn to pieces.

CALIFORNIA PURPLE FINCH.

The California Purple Finch (Carpodacus purpureus californicus) or Red-headed Linnet, is a bird that is complained of at times because it destroys the buds when the trees are in blossom. This species is not abundant enough later in the summer to cause much damage to fruit. It is only in the early spring when they come in flocks that complaint is made. The House Finch (Carpodacus mexicanus frontalis) is a bird that is almost identical and is so common through California. This is
the species that is found in some of the valleys through Southern Oregon, where the climate is so like that of California. The male purple and house finch may be recognized by the red color on the head and throat, fading to a more pinkish tint on the back and to a whitish on the breast. The female of both is plain colored, grayish-brown on the back, while the under parts are streaked with brown and white. All have the large finch bill.

As to the mischief some orchardists think the purple finch does to fruit blossoms, it is often exaggerated. The birds do eat the buds and blossoms, but experience has shown that they really do very little damage to the fruit crop. At Corvallis one of the faculty of the Agricultural College noticed that a flock of purple finches attacked one particular tree on his grounds. The birds were about the trees for a week and

![House Finch or Red-Headed Linnet](image)

were undisturbed. The ground under the tree was covered with blossoms, but the crop of cherries was not by any means destroyed. This is an unusual case, for in an orchard the purple finches seldom, if ever, limit their attacks to one tree. So the amount of harm generally done is scarcely enough to be obvious. The showers of blossoms that fall to the ground are not conclusive proof against the bird. In the end, the budding does little, if any, damage, for the buds are usually superabundant, and whether they are thinned out by birds or man it is frequently beneficial, relieving the trees from excessive bearing and improving the size and quality of the fruit.

The linnet is a bird of strong, conical beak that is readily recognized as a seed-eater. During the fruit season, it is not backward in taking its share, and a casual observer would think that fruit was its only article of diet. The examination of stomach contents by Prof. F. E. L. Beal shows conclusively that over 86 per cent of the food of the house finch for the year is weed seed. In his investigations, he examined the stomachs of 1,206 linnets through the fruit-growing sections of California. Of the total number of stomachs examined 1,133, or 94 per cent of all, held weed seeds, while 807, or nearly 67 per cent, contained no other food. There
were only 63 stomachs that did not contain weed seeds, while there were 909 that contained no fruit. When we consider that each one of these birds destroys several hundred seeds daily, the bird renders valuable service to agriculture, for the amount of weeds so destroyed is enormous.

KINGFISHER.

Nature has specially adapted the Kingfisher (*Ceryle alcyon*) for his life work. He seems top-heavy in appearance. Everything is forfeited to furnish him with a big head, a spear-pointed bill, and a pair of strong wings to give this arrow-shaped bird a good start when he dives for fish.

I have often watched the kingfisher along the river near my home. He sometimes occupies an old willow along the bank, and he sits there for half an hour at a time, occasionally turning his head and watching the water carefully. I sat on the bank one day as he came rattling down the river and swerving up, caught himself in mid-air and came to a stop fifteen feet above the water. What an eye he must have, to see a fish under the surface when going at such a pace. He fluttered for a moment as a sparrow hawk does above his prey, and dropped arrow-like, completely disappearing beneath the surface. The next instant he was in the air again with a crawfish. His clothes were water-tight, for the water ran off his satiny plumage as if his coat were thoroughly oiled.

Some people advocate shooting the kingfisher at every opportunity, claiming that he destroys too many trout. But along many of our streams he lives on the fish that are of little or no value to man. He catches comparatively few trout and never does he live on these alone. In Oregon his favorite food is crawfish, and he often catches different kinds of insects. Along some streams he lives mostly on frogs, lizards, and beetles. In the Southern States, where the streams are few and run dry in summer, the bird takes to a fare of grasshoppers and mice.

The kingfisher is not a social bird, and from an economic standpoint he may not compare well with some of our other birds, but he was here before man came, and should he not have the right to live a secluded life along our water ways? I wouldn't want a field without a meadow-lark, even if it did raise a good crop of hay. It would be a desolate patch
of woods with no chickadee. It would be a barren orchard without a
robin or chippy, even if it did bear apples. The river would be robbed of a
part of its interest if the kingfisher were not there. To my mind, the
river can never be quite the same if the kingfisher does not nest in the
bank.

WESTERN MEADOWLARK.

Those who live anywhere in the country districts about our State need
no introduction to the Meadowlark *(Sturnella magna neglecta).* It is a
bird of the field. It is a songster of the highest type. From an esthetic
standpoint, no farm is complete without this bird. Economically it is of
the greatest importance in any agricultural community. In Oregon the
meadowlark stays in sunshine, rain, and snow, even in the dead of
winter. He is an early builder, for he often rears a first brood in March or April before other birds have returned.

The meadowlark builds its nest on the ground in the middle of or in under a tuft of grass. The nests that I have found have been made in little hollows which the bird has worked out so that the home is completely arched over and covered by grass stems, making a sort of a cave from which the bird has a little beaten path to enter its nest. The meadowlark is a deceptive bird, for she seldom, if ever, lights near her nest. When feeding young, the parent bird will light from fifty to a hundred feet from the nest, and after a careful survey to see that she is not watched, will dodge low and creep through the grasses till she reaches her young. When leaving the nest, she takes the same caution by sneaking off in another direction for some distance before taking wing.

The meadowlark is easily recognized by its size, which is about the same as the robin. On the ground, he walks like a crow instead of hopping like a robin. The distinguishing marks in the male are the brilliant yellow of the breast and the crescent of black hung about the neck. The female has duller plumage throughout.

A study of the food of the meadowlark shows that it is a bird of great economic value. Its food is largely composed of weed seeds. When the grain is ripening and being harvested, the meadowlark lives almost entirely on grasshoppers, crickets, beetles, and other insects. The bird also destroys large numbers of cutworms, army worms, and chinch bugs. It is often thought that the bird eats considerable wheat and other grains, but a scientific study of its food shows that grain is but a small part of its diet. The grain eaten is largely gleaned from the stubble fields after the harvest is over when the insect food is scarce.

In the investigation of the food of the meadowlark, carried on by the Department of Agriculture, 238 stomachs were examined. These were collected in twenty-four different States, representing every month in the year. A summary of stomach contents for the whole year is, insect food 71.7 per cent, vegetable food 26.5 per cent, mineral matter 1.8 per cent. In other words, nearly three-fourths of the meadowlark's food for the year, including the winter months, consists of insects. During the summer months, when grasshoppers, caterpillars, and other insects are plentiful, the meadowlark lives on these almost entirely. Even in March, when insects are not easily found, they make up 73 per cent of this bird's food. So it is a wise provision in our Oregon laws that makes it a crime to kill this bird or destroy its nest.

SPARROW HAWK.

The Sparrow Hawk (*Falco sparverius deserticola*) is a bird whose name is against him. He should have been named the grasshopper hawk, which would have been more appropriate in every way, for he seldom touches a sparrow, while he lives to a large extent on grasshoppers. He is the smallest in our family of hawks, and is also the most beautifully marked, as well as a most beneficial bird. He may be recognized by the general color of bright red-brown on the back and the lighter brownish breast with black spots. The top of the head is slate-colored, with two black stripes on the cheeks. This hawk may often be recognized as it perches on the top of some pole, or as it flies out over the field and on fluttering wing poises in mid-air, looking for its food. The nest of this bird is built in a hole in a tree, the same as the woodpecker.
Dr. A. K. Fisher of the Biological Survey has made a careful study of the food habits of this hawk. Stomachs of 320 sparrow hawks were examined, and only one of them contained the remains of a game bird. It also contained twenty-nine insects. He proved that the bird is almost exclusively insectivorous, except when insect food is difficult to obtain. In many localities in the West where grasshoppers and crickets are abundant, these hawks will congregate, and rarely do they touch other kinds of food as long as the grasshopper crop lasts.
Among most people in the country, there is a deep-seated feeling against all hawks. They have seen a hawk swoop down and carry off a chicken, and the conclusion is that all hawks steal chickens and do nothing except fly about and wait for the chance. The farmer, who has seen his chickens go sailing off in the clutches of a hawk, it is mighty hard to persuade that a hawk is good for anything except a professional chicken thief. And under the circumstances, he can't be blamed, for hawks are not easy to get acquainted with and it takes an expert to tell the different kinds. Notwithstanding these facts, it is well to understand something of the real economic value of hawks, for they are not all given to stealing chickens.

Years ago, when the farmers of Pennsylvania saw hawks catching their chickens, they concluded that all hawks and owls were dangerous to their poultry yards. As a result, a law was passed offering bounties for the bodies of these two species of birds. Before long, the Department of Agriculture at Washington began to receive letters from farmers of Pennsylvania complaining that field mice were destroying their crops to an unusual extent. A study of the problem soon revealed the fact that the destruction of the birds of prey had destroyed the natural check upon these harmful rodents. In interfering with Nature's balance to this extent, the farmers lost several million dollars' worth of grain. The hawks and owls are Nature's check against the great army of harmful rodents that inhabit our fields and gardens. The hawks hunt by day and keep the small diurnal animals in check, and the owls are especially equipped to supplement the work of the hawks. Their eyesight is keenest during the early hours of the night and morning when moles, gophers, and mice are more active.

SCREECH OWL.

The Screech Owl (Megascops asio kennicottii), like the sparrow hawk, is largely an insect-eating bird. It is common all through the western part of our State, where it makes its home in some hollow tree in a patch of woods nearest a farm house. In the day time it is sometimes seen snuggled up on the limb of a thick tree, close against the trunk, where its mottled color matches well with its surroundings. It is sometimes called the Mottled Owl, or the Little Horned Owl, because of its small size and its ear-tufts, which it generally holds erect.

Superstitious people think the owl is a bird of bad omen, but to one who loves bird life, the weird whistle of the screech owl among the trees or about the garden on a still summer or fall evening, has a peculiar fascination. We may well marvel at his wonderful sense of sight and hearing, for as he floats shadow-silently over the garden, he hears even the foot-step of a mouse or sees the slightest movement of a gopher and swoops to catch his prey with steel-trap claws.

It is comparatively easy to determine the exact economic status of the hawks and owls by an examination of the pellets found about their homes or roosting places. These birds often swallow the smaller rodents entire, or tear them apart, swallowing the fragments. As soon as the nutritious portions of the food are absorbed, the other portions, such as hair, feathers, and bones, are rolled into a ball by the action of the muscles of the stomach. These are vomited up, and are known as pellets, and by examining these, scientists can tell exactly what kind of food has been eaten.

Through many of the Middle Western States, where the interests are largely agricultural, the Rocky Mountain locust is at times very destructive to crops. In the first annual report of the United States Entomological Commission, there are figures showing that in the four States of Kansas, Nebraska, Iowa, and Missouri the loss to crops by locusts was 142,942,800 bushels, which with a money value of 28 cents per bushel, would mean a loss of $40,000,000. An examination of the stomach con-
tents of eight screech owls taken at that time in Nebraska showed that they had eaten just before they were killed 219 locusts and 247 other insects, besides two mice.

In speaking of the value of owls, Mr. George C. Jones says: “I think the smaller species of owls feed upon the cutworm to some extent. I have found cutworms in the stomach of the common screech owl. The fact that both the cutworms and the owls are nocturnal leads me to believe that the owls, of all the birds, are the most efficient exterminators of this formidable pest and should on this account receive protection.”

In one locality, almost every tree of a five-acre peach orchard was girdled by mice and rabbits during the winter. It would have paid the owner of the orchard to have had owls and hawks about the locality, even though a chicken might have been stolen occasionally. In many places where our young fruit trees are alive and in good condition, we do not realize that it may be due to the hawks and owls, for we often credit them with more harm than benefit. Here in Oregon, the mice, gophers, moles, and rabbits stay with us summer and winter, and so do the hawks and owls.