

WESTERN BIRDS



HARRIET
WILLIAMS
MYERS

FOR THE PEOPLE
FOR EDUCATION
FOR SCIENCE

LIBRARY
OF
THE AMERICAN MUSEUM
OF
NATURAL HISTORY

WESTERN BIRDS



THE MACMILLAN COMPANY
NEW YORK · BOSTON · CHICAGO · DALLAS
ATLANTA · SAN FRANCISCO

MACMILLAN & CO., LIMITED
LONDON · BOMBAY · CALCUTTA
MELBOURNE

THE MACMILLAN CO. OF CANADA, LTD.
TORONTO



ANNA HUMMINGBIRD AND NEST ON TWO PEACHES (Life Size).

WESTERN BIRDS

59.82(79)
c_v

BY

HARRIET WILLIAMS MYERS

Author of "The Birds' Convention"

Vice-President of

"THE CALIFORNIA AUDUBON SOCIETY"

New York

THE MACMILLAN COMPANY

1922

All rights reserved

PRINTED IN THE UNITED STATES OF AMERICA

22-98150 Dec 13

COPYRIGHT, 1922,

BY THE MACMILLAN COMPANY.

Set up and electrotyped. Published October, 1922.

Press of
J. J. Little & Ives Company
New York, U. S. A.

To My Mother

ORRILLA WEBSTER WILLIAMS

THIS BOOK IS LOVINGLY DEDICATED
IN APPRECIATION OF THE INSPIRATION
RECEIVED BECAUSE OF HER INTEREST
IN AND KNOWLEDGE OF THE
CALIFORNIA BIRDS

FOREWORD

In this work, which deals with the song birds of the States bordering the Western Coast and, to a lesser degree, the interior Western States, I have followed the American Ornithological Union (A. O. U.) Check-List assisted by Joseph Grinnell's "A Distributional List of the Birds of California," for the scientific names and habitats of the various species, and while I have tried to make it scientifically correct, it is my wish to have the information herein contained so plain and simple that the most unscientific of readers may enjoy and become more familiar with our feathered wild life.

In dealing with the various bird families, where there are especial characteristics that would help the bird student, I have prefaced the descriptions of the species considered with helpful general remarks.

Also, in several cases, I have described an eastern bird, especially when that bird was very well known and is the type of the species, while the western form is a subspecies. This I feel will be helpful to western tourists, as well as of interest to all bird students and lovers.

When the female and young of a species being described are not mentioned in the description, it may be understood that the resemblance to the male is so marked as to be unmistakable.

Having been a careful student of bird life for many years I have gained much valuable first-hand knowledge. This I have supplemented with information from the writings of the best authorities both East and West.

I would acknowledge gleaning from the writings of W. Leon Dawson, Joseph Grinnell, Florence Merriam Bailey, Frank M. Chapman, Edward H. Forbush, Alexander Wilson, Elliot Coues, Thomas Nuttall, Olive Thorne Miller and Bradford Torrey. Also George Willett's "Birds of the Pacific Slope of Southern California," Harry S. Swarth's list of the Birds of Arizona, the Bulletins of the Biological Survey of the Department of Agriculture; the leaflets of the National Association of Audubon Societies, and such magazines as *The Auk*, *The Condor*, *Bird-Lore*, *Wilson's Bulletin*, and *American Ornithology*.

HARRIET WILLIAMS MYERS.

Los Angeles, California.

TABLE OF CONTENTS

BIRDS BY FAMILIES.

	PAGES
ROADRUNNERS, CUCKOOS, KINGFISHERS	1-6
WOODPECKERS	7-40
SWIFTS, HUMMINGBIRDS, ETC.	41-68
FLYCATCHERS	69-96
LARKS	97-99
CROWS, JAYS, MAGPIES, ETC.	100-115
BLACKBIRDS, ORIOLES, MEADOWLARKS, ETC.	116-141
SPARROWS, FINCHES, ETC.	142-218
TANAGERS	219-222
SWALLOWS	223-235
WAXWINGS	236-240
SILKY FLYCATCHERS (PHAINOPEPLA)	241-244
SHRIKES	245-250
VIREOS	251-256
WOOD WARBLERS	257-285
WAGTAILS	286-287
DIPPERS	288-293
THRASHERS, MOCKINGBIRDS, ETC.	294-305
WRENS	306-316
CREEPERS	317-319
NUTHATCHES	320-327
TITMICE	328-341
WREN-TITS	342-345
KINGLETS AND GNATCATCHERS	346-359
THRUSHES, BLUEBIRDS, ROBINS, ETC.	360-383

LIST OF ILLUSTRATIONS

Anna Hummingbird and Nest on Two Peaches (Life Size)	<i>Frontispiece</i> FACING PAGE
Black-Billed Cuckoo (1)	18
Willow Woodpecker	19
Yellow-bellied Sapsucker (1)	22
Red-breasted Sapsucker (1)	22
Acorns Stored by California Woodpecker (2)	23
Hairy Woodpecker	40
Costa Hummingbirds	41
Anna Hummingbirds, Young in Bush (3)	56
Black-chinned Hummingbird	57
Arkansas Kingbird (1)	74
Purple Martin (1)	74
California Jay	75
Phainopepla	75
Blue-fronted Jay (1)	100
Wood Pewee (1)	100
Crows	101
Young Magpies (4)	131
Cow Bird—Audubon Warbler	132
Meadowlark (1)	140
Young Brewer Blackbird—Nest of Redwing (5)	141
Nests—Bell Sparrow, Lark Sparrow, Wren-Tit, Lawrence Goldfinch (6), Olive-backed Thrush (5)	158
House Finch or Linnet and Nest	159
Green-backed Goldfinch—Bird Bath (7)	162
Linnet and Gambel Sparrow at Feeding Shelf (8)	163
Gambel Sparrow (9), Young Grosbeak, Young Hooded Oriole	174
Song Sparrow, Nest and Young	175
Rufous-Crowned Sparrow and Nest	180
Lazuli Bunting (1)	181
Slate-colored Junco (1)	181
Anthony Towhee, Nest and Young	210

	FACING PAGE
Cedar Waxwings (10)	211
Cliff Swallows, Nest of Bank Swallows (5)	228
Bank Swallows	229
Phainopepla	239
Young Shrikes	239
Shrike and Sharp-shinned Hawk (6)	240
Vireo	258
Yellowthroat (1)	259
Long-tailed Chat (1)	259
Mockingbird, Young, Nest (6)	287
Dipper or Water Ouzel and Nest (5)	288
Nests. Tule Wren, House Wren, Bullock Oriole (5), Hooded Oriole, Meadowlark, Road-runner (6)	308
Canon Wrens (5)	309
California Chickadee and Black Phoebe (5)	328
Plain Titmouse (1)	329
Bush-tit Nests	338
Wren-Tit on Nest. Nest	339
Verdin and Nest (7)	352
Western Robins at Bath, Robin (10), at Nest (7)	353
Hermit Thrush	370
Varied Thrush (1)	370
Bluebirds (1)	371

1.—Brown Bros. 2.—C. C. McLean. 3.—Robt. Lindsay 4.—Government. 5.—Mrs. F. T. Bicknell. 6.—F. E. Kelsey. 7.—Helen S. Pratt. 8.—Mrs. E. J. Saunders. 9.—Mrs. I. J. Mitchell. 10.—Mrs. W. H. Martz. Other photographs by the author.

WESTERN BIRDS

Order Coccyges: Cuckoos, etc.

GENUS GEOCOCCYX: ROAD-RUNNER.

Suborder Cuculi: Cuckoos, etc.

Road-Runner: *Geococcyx Californianis*.

FAMILY—CUCULIDÆ: CUCKOOS, ANIS, ETC.

SUBFAMILY—NEOMORPHINÆ:
GROUND CUCKOOS.

IN the Road-runner, also called Ground Cuckoo, Chaparral Cock, and Snake-killer, we have a unique bird found in the arid, sandy regions of the west, which is different enough from everything else to make the bird student rejoice, for there is no mistaking it.

It is found in California, north to the upper Sacramento Valley, in Colorado, Kansas, and middle and western Texas south through Lower California.

The Road-runners are dwellers of the ground, running with the swiftness of a horse, when they wish, and seldom flying. They are nearly two feet long, the tail being eleven or twelve inches in length, with the middle feathers longest and the others graduated; wings short; feathers of head bristle-tipped, plumage coarse; crown crested, and a naked area around the eye bluish and orange. The upper parts are lustrous bronzy, changing to bluish-black on head and back, the whole conspicu-

ously streaked with brownish-white. The long tail is plain iridescent black, tipped with white thumb marks on all but middle feathers; under parts tawny-white streaked with black; throat and belly, whitish; bill about as long as head and slightly curved; feet large and strong, as befits a ground-dwelling bird.

One always feels repaid for any effort when a Road-runner is seen, for they are such striking, interesting looking birds. They are not particularly shy, in fact they sometimes come into chicken yards and nest in the neighborhood of homes if they chance to be near the brush-covered hills, or sandy wastes where they live. They thrive in captivity, when given enough room, and make fascinating pets. Mrs. Elizabeth Grinnell, of Pasadena, had one of these birds for several years, giving it the run of the house, as well as an outside runway, where it made itself perfectly at home, sleeping at night on a shelf in her own bedroom.

Their food consists of mice, horned-toads, snakes, lizards, land shells, centipedes and like things. The nest is compactly made of sticks lined with finer material and placed low in trees, bushes, or cacti. Coues says that from three to nine white, elliptical eggs are laid at considerable intervals, and that incubation begins as soon as a few are deposited; that the development of the chicks is rapid, perfectly fresh and newly hatched young being found together, and that by the time the last young are hatched the others may be up to half the size of the adult. "They are singular birds—cuckoos compounded of a chicken and a magpie."

Wonderful stories are told of the bird's being able to run before the swiftest horse, its wings being held as outriggers and the tail thrown over the back to help it in a quick turn or abrupt halt, but just how fast the bird can go I would not attempt to say. In regard to its killing rattle-snakes, while I have never seen this

done, a reliable eye-witness reported that he had. With its powerful bill the bird worried and injured the snake, giving it no chance to strike, and keeping out of its way, until it was exhausted and finally killed.

When angered, the bird raises its crest, snaps its bill and gives a peculiar rattling guttural series of notes hard to describe, but unmistakable. It has other loud, rather mournful calls that remind one of its relationship to the Cuckoo.

GENUS COCCYZUS: CALIFORNIA CUCKOO.

California Cuckoo: *Coccyzus americanus occidentalis*.

FAMILY—ROAD-RUNNERS AND CUCKOOS.

THE California Cuckoo is the western representative of the Yellow-billed and differs from it chiefly in being larger.

The adults are about thirteen inches long and have rich brown upper parts which have a slightly greenish gloss; wings more rufous except at tips; tail graduated; outer tail feathers black, deeply tipped with white, making conspicuous thumb marks on the underside of closed tail; under parts white, or ashy; upper mandible black, lower yellow, except at tip.

The western Cuckoo is only locally abundant on the Pacific Coast and in most localities can be listed as rare. In California it is most abundant in the low willow thickets of the interior. Willett says that in the southern part of the state it is a fairly common resident of the willow regions of the lowlands but its secretive habits render it easily overlooked. It probably arrives early in May and leaves mostly in September.

J. H. Bowles says that the nest is rather a frail structure, but much more bulky than that of the eastern species. It is placed from four to ten feet from the ground, usually nearly ten, and is more often built against the trunk of a baby fir. Usually three eggs are laid but sometimes only two, and often a week elapses between the laying of the first and last egg. This slowness in depositing the eggs seems, also, to be a habit of the eastern bird, since eggs in all stages of incubation, and even young birds, are found in the nest. Bowles gives the call of the western bird as a harsh *krow-krow-krow-krow*, and a more plaintive *kru-kru, kru-kru*.

The eastern Cuckoos inhabit both woodlands, shade trees, and orchards, seeming not to avoid mankind. In fact, as destroyers of the destructive tent caterpillars they have proved themselves most helpful to the human race. Forbush says of its fondness for hairy species: "No caterpillars are safe from the Cuckoo. It does not matter how hairy or spiny they are, or how well they may be protected by webs. Often the stomach of the Cuckoo will be found lined with a felted mass of caterpillar hairs, and sometimes its intestines are pierced by the spines of the noxious caterpillars it has swallowed. Wherever caterpillar outbreaks occur there we hear the call of the Cuckoos. There they stay; there they bring their newly-fledged young; and the number of caterpillars they eat is incredible."

The Cuckoo is fond of water and wet places, frequenting bushes and low trees along streams. In such shaded places it will most frequently be found, rather than in the open. Its flight is straight and low. A long brown streak flies across the road just before you and disappears in the growth at the side, and there is no mistaking it for anything else.

The birds are not musicians, although throughout the warm days, and even in the night, their rather mournful notes may be heard. So often is their *cow-cow-cow*

heard before a storm that they are called Rain Crows and, by many, thought to predict a storm. Other notes given *coo coo coo cuck coo*, a gluttural *qua quah gwait*, *tut tut tut*, *cl-uck-cl-uck*, are not easily confused with notes of other species.

While these birds sometimes drop their eggs in other birds' nests, they are devoted parents and the parasitic tendency is exceptional, rather than otherwise.

The nest is a crude affair placed usually low in tree or brushy thicket, made of a platform of zig-zag twigs overlaid with green leaves, grasses, withered blossoms or weeds, making an insecure home for the nestlings. More than one brood is raised.

The female does all the brooding, but the male guards and drives away intruders, keeping up his monotonous *cow-cow-cow*, which is undoubtedly appreciated more by his mate than his human listeners.

SUBORDER ALCYONES: KING- FISHERS.

FAMILY—ALCEDINIDÆ: KINGFISHERS.

Belted Kingfisher: *Ceryle alcyon*.

THE Kingfisher is another bird to delight the bird student because of his unusualness and his wide distribution, the one species being found both east and west. It breeds from Alaska to Quebec and Newfoundland south to the southern border of the United States, wintering from British Columbia and States as far north as Nebraska and Illinois, south, being found irregularly as far north as Massachusetts, New Hampshire, and Ontario.

The bird has a long crest, a stout straight bill that is longer than its head, and tail broad but much shorter than wings. It is from eleven to fourteen and one-half

inches long with bluish-gray upper parts, the wing feathers being tipped with white, forming small white spots; tail feathers with spots and broken bands of white; a spot before the eye, throat, and band that nearly meets at back of the neck, lower breast and belly, white; sides and a band across the breast are bluish gray. The female differs only in having the sides and a band on the belly, rufous; immature have rufous sides.

The Belted Kingfisher is a lover of water, living along wooded streams, ponds, and even the ocean. Perched on a bare limb or post the bird watches in the water for its prey and when a tiny fish is sighted plunges head first after it, returning, if he is successful, to his perch, where he shakes his feathers and swallows the catch, head first. He has a pleasing way of holding himself poised in air as he hovers over the stream in search of food, much as the Sparrow Hawk sights his prey in the field.

They are solitary birds, usually one individual, a pair, or family, according to season, being seen along pond, mountain stream, or beach, as the case may be. One requisite of the nesting season is, however, a bank of sand, or clay, where a hole can be excavated for the eggs. These holes are dug out by the birds, usually near the top of the bank, and run back from four to six feet. From five to eight white eggs are laid. The young are hatched naked but when they are able to leave the nest-hole are quaint, big-headed replicas of their parents.

The call of these birds is quite different from that of other birds and unmistakable, being a weird wooden rattle which is given by the bird as it flies down the stream, dives after his prey, or returns with it, jubilantly, to his perch.

Unusual in shape because of his big pompadour and long bill, noisy with his rattling call, associated with the cool bubbling water because of his habits, he is, indeed, a quaint and interesting species.

ORDER PICI: WOODPECKERS, ETC.

FAMILY—PICIDÆ.

WHILE numerous varieties of small birds guard leaf, twig, branch, and bark of our trees, it is left to the Woodpeckers to do a service which neither man, nor other birds, can do.

Forty-five species and subspecies of this family are found in the United States, most of which are decidedly important economically, since the food consists of wood-boring grubs, hibernating insects, insects' eggs and pupæ. The fact that these birds are less migratory than most species, and stay in their range winter and summer, increases their usefulness.

They are essentially tree-dwellers and so Nature has supplied them with the necessary tools and appliances for their surgical operations upon the trees.

Their legs are short and stout and, with the exception of a few members of the family, are all supplied with four toes, two of which point forward, and two backward. These toes are furnished with strong, sharp claws. The tail feathers have the center quills extended, forming sharp points which are used as supports, enabling them to hold themselves in an upright position on the tree-trunk. Their manner of proceeding up a tree is by short hops, sometimes circling the trunk, and is different from that of any other species. The Nuthatches, their nearest confrères, being able to, come down head first, which the Woodpeckers never do, or *walk* under a limb; and the Creepers *walk*, or *run*, rather than *hop*, upward. These last named birds are also much smaller.

The thing which enables these birds to bore into the trees—sometimes to the depth of four inches in the larger species—is the construction of the head. Their bills are very large and strong and are supplied with chisel-shaped points which form an effectual wood-cutting tool which enables some of them to tear off large pieces of rotten wood.

Probably the most powerful thing about them is the tongue, which is more or less cylindrical in form and very long. At the end there is a hard point with more, or less, barbs upon the side. It is extended in two long slender filaments of the hyoid bone which curl up around the back of the skull, and in most species stop between the eyes, but in some others enter the right nasal opening and extend to the end of the beak, thus making the tongue twice the length of the head. This organ is enclosed, at the back of the head, in a muscular sheath by means of which it can be extended from the mouth to some distance beyond the end of the beak, enabling the bird, not to stick in his thumb and pull out a plum as did Jack Horner, but to stick in his *tongue* and pull out a *grub*, a titbit as eagerly sought for by the birds as was the plum by the willful boy.

They have a way of tap, tap, tapping, as they go up the tree, and after a number of taps, in some way, whether by the difference in the *sound* of the tap, or by the *feeling* of the wood, they detect that an insect borer is beneath. Then, propping itself against the tree by the aid of the stiff tail, the bird drives its bill into the wood. The manner of so doing is to bend the head until it is at right angles with the body, then, with the latter rigid, to lift the whole body up, then down, driving the bill against the desired object with great force. The skull is stout and can resist this constant pounding which in another species would produce concussion of the brain.

When on the wing the Woodpeckers may be identified

by their undulating flight which makes them seem to fairly bound through the air.

Because of the growing interest in the preservation of our National Forests and because, in many cases, pests have threatened the entire destruction of the same, scientists have been studying the best means to combat these insect enemies. In Biological Survey Bulletin, No. 37, by E. A. E. Beal, we learn that it has been estimated that the annual loss from insect work on forest trees, and their crude or finished products, amounts to at least \$100,000,000.00. We learn that no period in the life history of the tree is exempt from insect attack, and that every part, from the smallest roots to the terminal buds, leaves, flowers, and fruit, may be infested by one, or many species. That living, diseased, dead, or decaying, a tree may be the home of hundreds of species and thousands of individuals of insect life.

The fondness of the Woodpeckers for the bark beetle makes them of inestimable value to the spruce-timber of the northeast. In many hundreds of infested trees examined, at least one-half of the beetles and their young had been destroyed by the birds. Estimating one hundred beetles to the square foot of bark in the average infested tree, and an average of sixty square feet of infested bark, it is possible for each tree to yield an average of six thousand individuals; one hundred trees, six hundred thousand, and so on.

It is, therefore, plain that if one-half or two-thirds of the number are destroyed by the birds and other enemies, the amount of timber the remaining can kill will be lessened. The work of the birds is more apparent when we remember that only when there are great numbers of the beetles can they overcome the resistance of the living trees.

These birds nest in holes excavated by themselves in rotten trees, some species also using poles, posts, and

buildings, especially when trees are scarce. The hole dug is somewhat pouch-shaped, the bird digging in for a few inches, then turning downward and hollowing out a place big enough for nesting purposes. Of course, the chips made by this digging process, that do not naturally fly out on the ground, must be carried out in the birds' bills. In some species part of them are left for the eggs, while in others they are all taken out.

In this work I shall describe only the most common and typical of the various genera. Most of the eastern species are not found in the west but their places are taken by similar subspecies.

GENUS DRYOBATES: CABANIS WOODPECKER.

Cabanis Cuckoo: *Dryobates villosus hylóscopus*.

FAMILY—WOODPECKERS.

THE Cabanis Woodpecker is the western representative of the Hairy which is not found west of the Rockies. In plumage and habits it is, however, quite similar. The male is about nine and one-half inches long, has a scarlet patch on the back of the head, and the rest of the head much striped with black and white; a broad white stripe down the back, and the rest of the upper parts black lightly marked with white. The central tail feathers are black, the outer ones white, as are the under parts. The female lacks the scarlet patch on the back of the head. The northern form of this bird is known as the Harris. It is slightly larger than Cabanis and is smoky below rather than white.

These birds are most often seen in the high altitudes, in the mountains and timbered lands, rather than in the orchards, although they sometimes nest near the abode

of man and after nesting duties are over stray down into the valleys. All members of this tribe are restless, flying quickly from tree to tree, and are also rather noisy, their call being a high-pitched note, which is sometimes repeated rapidly in a long rattling call which is its nearest approach to a song. However, Woodpeckers are interesting enough without singing. Music from these large, clumsy birds, many of whom delight in the solitude of the forest, would seem quite out of place. And, too, one can hardly conceive of real music coming from a beak that conceals a barbed weapon.

Both birds dig at the nest-building and help with the brooding. From three to six white eggs are laid. The young resemble their parents except that they have a red patch on the top of the head.

GENUS DRYOBATES: WILLOW WOODPECKER.

Willow Woodpecker: *Dryobates pubescens turáti*.

FAMILY—WOODPECKERS.

ALL bird lovers are familiar with the little Downy Woodpecker of the east, a bird whose place is taken in California by the Willow, in the southern part of the State, and a similar bird which is known as Gairdner's north of Mendocino County.

These little birds are about six and one-half inches long, have upper parts black, save for whitish foreheads, white stripe down back, and red patch at back of head (nape). Sometimes a few white markings on wings; outer tail feathers white, barred with black, under parts white. The scarlet patch at the back of the crown is lacking in the female, while the young differ, only, in having the top of the head, red. The black bars on the

outer tail feathers, and the larger size, will identify this bird from the Cabanis and Harris. The Gairdner differs from the Willow, chiefly in having smoky under parts. It is found as far north as southern British Columbia.

Though these western birds are not wild, scrambling over the trees in Downy fashion unmindful of the onlooker, yet they are more often seen in the foothills, and along the streams, than in orchards and gardens. To be sure, one of these shrill-voiced little birds often comes over from the Arroyo Seco to forage on my pepper trees, and sometimes helps himself to an English walnut in the garden, but for the most part, one would not look for them in a city yard. A pair of them also once selected a nesting site in a park which joined the Arroyo Seco, showing that the presence of mankind did not bother them.

The place selected for the nest-hole was in a limb of a partly decayed sycamore tree, one of the gnarled, deformed old beauties of the park. The limb was a good-sized one which had grown at right angles to the trunk, and after reaching out ten, or twelve, feet, had started to grow downward. In this downward part, about six feet from the ground, the birds had hewn out their nest on the west side of the tree. On the projecting horizontal limb hung a swing which, as time went on, was in almost constant use and so prevented the birds from feeding that, at my request, the superintendent took it down.

On June third there were young, which I judged to be about a week old, in the nest and the old birds were industriously feeding. At this time they were very fond of coming to the rope, nearly always lighting on it, and hopping up it, before flying across the short space to the nest. The male had a way of resting beneath the hole and bobbing his head about before entering. The female was much shyer and at first minded my presence, but when assured that no harm was contemplated, she

popped right into the hole without any preliminary head-bobbing.

Never in any bird family I have watched have I seen such gallantry and consideration shown toward the female as was manifested by this little male. Several times he came to the tree with food just a little ahead of the female, once being about to pop into the hole when his mate lighted near him. Instead of rushing in before her, as most birds would have done, he backed down the tree, or flew over to the rope before it was taken down, and waited until she had fed and gone before leaving his offering. It was as if he had said, "You first, my dear." I could not help but contrast these actions with those of the Western Gnatcatchers that I once watched. Both of these birds scrambled, post-haste, to beat each other to the nest, showing no consideration for sex. And, too, in the case of the Woodpeckers, I noticed that it was always the male who cleaned the nest.

As the young grew, their loud, purring noise always attracted the attention of the picnic parties, which were of almost daily attendance, and there was always some child that must be raised up to stick its finger down the hole. Usually, this resulted in an exclamation, for the nestlings promptly grabbed the finger thus thrust among them, much to the surprise, and delight, of the owner. The adults did not mind the crowd just so they stayed back about thirty feet.

On one occasion one of the girls of the party, wishing to help the hard-working little birds, dropped a piece of bread into the hole. Shortly afterwards the male appeared with food and disappeared into the tree. He was only gone a minute when he stuck his head out of the hole and in his bill he bore the bread. As he flew away he dropped it where, no doubt, a Song Sparrow, Blackbird, Towhee, or Grosbeak had a feast of it. It

was quite evident that Mr. Woodpecker did not approve of bread for growing birds and, too, that he felt quite equal to caring for his nestlings without human aid.

When I had watched this nest for ten days, one of the nestlings began peeking out. The top of its head was red, otherwise it resembled its parents. Often when the old birds came with food they fed this ambitious youngster six or seven times. They did most of their foraging from the old trees in the park, and it was quite evident that they were doing a great work in ridding them of insect pests.

Ordinarily, the birds worked quietly but when excited by some interference of picnic parties they have a sharp "crip," and sometimes a longer rattling sound was given.

I had watched at the nest fourteen days when the young finally left the hole and disappeared into the foliage above. A week later the parents were digging into the limb on the opposite side, making the chips fly in all directions, and I wondered if another hole was to be excavated. It proved, however, to be only a bit of experimental work on their part which was soon given up. These birds have a way of using old holes, or perhaps new ones, for bedrooms, seeming not to mind excavating for that purpose, if no suitable old hole is at hand.

GENUS DRYOBATES: NUTTALL'S WOODPECKER.

Nuttall's Woodpecker: *Dryobates nùttalli*.

FAMILY—WOODPECKERS.

ON the Pacific coast is found another woodpecker midget which is found from southwestern Oregon, south to northwestern Lower California, west of the Sierras.

Although about the same size as the Willow there is no danger of any one mistaking them, for Nuttall's is so barred in black and white as to remind one of a Plymouth Rock chicken. The forehead is dingy, the crown black, sometimes streaked with white, the back of head (male) with red patch, middle tail feathers black, outer tail feathers white with no more than two distinct black bars, under parts white, spotted on sides. The young have more spots on sides and the red on top of head.

These birds are not so friendly as the preceding and must be studied in the foot hill regions and among the trees of the mountains. I once watched a family of them scrambling over the pines at a three thousand foot elevation, where they were exceedingly noisy, their shrill sharp calls being unmistakably Woodpecker notes. One evening I saw one of them go into a hole in a pine tree just before dark, and as he did not return, I concluded that he had retired for the night. At Del Monte these birds were quite abundant one May scrambling about in the big oaks and I dare say were nesting there.

GENUS XENOPICUS: WHITE-HEADED WOODPECKER.

White-Headed Woodpecker: *Xenopicus albolarvatus*.

FAMILY—WOODPECKERS.

To the west is given a member of this large family which is quite different from all the rest. This bird is about nine inches long and is entirely black, save for a white patch on the wings, a red patch on back of neck (in male) and a white head and neck, which has given it the name of White-headed Woodpecker. They are found in the mountains along the Pacific Coast as far

south as southern California, east to eastern Oregon, western Idaho, and western Nevada.

This white-headed bird is rather more quiet than most of his family, seeming to use his bill as a crow-bar to pry off bark, rather than to pound and dig, as do most Woodpeckers. Like others of the smaller members of the family, he hunts on branches as well as tree trunks, goes up or easily backs down, and explores the under sides of limbs. About half the animal food he consumes consists of ants, and he is especially fond of the seeds of pines, which constitute about half his food.

Mrs. Florence Merriam Bailey tells us that while the bird is strikingly conspicuous while in flight, when foraging over a tree trunk he so blends with the lights and shadows that he is hard to locate. Dr. Merriam also tells of his experience with the birds at Fort Klamath. He says: "There the pines have stubs of branches projecting an inch or two from the trunk which, lit by the sun, appear white themselves and cast a black shadow. In winter when a little snow has lodged on these stubs the resemblance is still greater, often leading one to mistake a stub for a bird."

The first one of these birds I ever saw was one May when I visited the Mariposa Grove of Giant Sequoias in Mariposa County a few miles from the Yosemite National Park. As I gazed up at one of these enormous trees I saw a very glossy black bird whose throat and top of head were white, but whose red patch on back of neck was so conspicuous that at first I feared it could not be the White-head that I was looking at. It worked around on the bark but was so high up that, even through the glass, it did not look its size. I longed to have it come lower for a closer inspection. Still I was thankful for this view of this interesting white-headed bird.

GENUS PICOIDES: ARCTIC THREE-
TOED WOODPECKER.

Arctic Three-Toed Woodpecker: *Picoïdes árticus*.

FAMILY—WOODPECKERS.

WOODPECKERS of this group are of interest because they differ from all the others in having only three toes, two of which point forward, and also in lacking red in their plumage. This brilliant color which usually adorns some portion of a *male* Woodpecker's head is replaced in this genus by a patch of *yellow* on crown.

It is about nine and one-half inches long and is black above, save for small white wing spots and white outer tail feathers; the under parts are white with black barings on sides, and a broad white band runs from bill below the eye and down the neck. The female lacks the yellow patch.

They are found in northern North America, both east and west, extending south to the Sierra Nevada of California and mountains of Nevada, Idaho, Wyoming, South Dakota (Black Hills), Minnesota, Michigan, northern New York, Vermont, New Hampshire, and Maine; casual in winter to Nebraska, Illinois, Ohio, Massachusetts, and Connecticut.

These little black-backed Woodpeckers are dwellers of the high tree tops, being especially fond of pine, spruce, fir, and tamarack forests, where their restless, active ways make them hard to watch, or approach. In its cry, which is a loud shrill "chirk," and in its movements, it is said to resemble the Red-cockaded Woodpecker; while in its manner of persistent drumming, which can be heard half a mile away, it has been compared by Bendire to the Hairy member of the family.

Coues calls this bird the Black-backed Three-toed

Woodpecker. Beal, in Bulletin 37, says of these three-toed birds: "All are residents of coniferous forests, from which they sometimes wander a short distance in winter. The trunks of scaly-barked conifers, such as spruces, hemlocks, tamaracks, and lodgepole pines, are their favorite hunting grounds, and here they excavate burrows in which they rear their young and find shelter at night."

The great bulk of their food consists of wood-boring beetles and moths, which they eat regularly at all times of the year, but consume more in the winter time when, apparently, all insect life is quiescent.

Because of the great good they do in combating the insect enemies of the forest, Dr. Beal thinks that it is unfortunate that in most places they are not so common as others of the family. For this reason he advises that they be carefully protected and encouraged in every way.

GENUS SPHYRAPICUS: SAPSUCKERS.

FAMILY—WOODPECKERS.

OUR group of Woodpeckers known as Sapsuckers are among our handsomest birds but because of their sapsucking habits, which often destroy the trees, they have been denied protection in many states.

W. L. McAtee in Bulletin No. 39, Biological Survey, has made an exhaustive study of these birds and their habits which all especially interested should read.

"While most Woodpeckers have long tongues which can be thrust far out of the beak and which are armed at the tip with backward projecting spines, enabling them to secure their prey although deeply buried in wood, the Sapsuckers have short, practically non-extensible tongues, furnished with a fringe of stiff hairs, not adapted to the capture of wood-boring insects."

In keeping with their peculiarities of structure, these



Copyright by Brown Brothers.

BLACK-BILLED CUCKOO.



WILLOW WOODPECKER.

brush-tongued Woodpeckers have peculiar food habits. Being true sap-sucking and cambium-eating species they girdle and kill many trees, either by destroying extensive areas of the cambium or, more commonly, by removing many small pieces in such a way as to sever most if not all the channels carrying the elaborated sap from which both wood and bark are formed.

The result of Sapsucker attacks on trees are so uniform and characteristic as to be distinguished easily from the work of other Woodpeckers. Sapsucker holes are drilled clear through the bark and cambium and often into the wood. They vary in outline from circular to squarish elliptical, in the latter case usually having the longer diameter across the limb or trunk. Generally they are arranged in rings or partial rings around the trunk, but they often fall into vertical series. Deeply-cut holes arranged with such regularity are made only by Sapsuckers.

After the original pattern of holes is completed, the Sapsuckers often continue their work, taking out the bark between holes until sometimes large areas are cleanly removed. This often occurs on small limbs or trunks, where long strips of bark up and down the trees are removed, leaving narrow strings between. This effect is also produced by continually enlarging single punctures by excavating at the upper end, which is done to secure fresh inner bark and a constant supply of sap. Occasionally, after a tree has been checkered, or grooved, after the above described systematic methods, it may be barked indiscriminately, leaving only ragged patches of bark.

Even in such cases, however, traces of the regularly arranged punctures are likely to remain, and there is no difficulty in recognizing the work as that of Sapsuckers, for no other Woodpecker makes anything like it on sound, living trees.

All holes, grooves, or irregular openings made by Sap-

suckers penetrate at least to the outermost layer of sapwood, or non-growing part of the tree. This results in the removal of the exterior rough bark, the delicate inner bark, or bast, and the cambium. Since the elaborated sap (upon which the growth of the tree depends) is conveyed and stored in these layers, it is evident that Sapsuckers attack the tree in a vital part. Each ring of punctures severs at its particular level part of the sap-carrying vessels, another ring made above destroys others, and so the process continues until in extreme cases circulation of elaborated sap stops and the tree dies. When the injury to the vital tissue is not carried so far, only a limb here and there may die, or the tree may only have its vitality lowered for a few years. If the attacks cease, it may completely recover.

Recovery, however, does not mean that the tree has escaped permanent injury. Patches of cambium of varying sizes may be killed, causing growth to cease at these points and the dead and discolored areas are finally covered by wood and bark. Until this process is completed, the tree is disfigured by pits with dead bark and wood at the bottom, and even when completely healed, the spot remains a source of weakness. In fact, all Sapsucker pecking is followed by more or less rotting and consequent weakening of the wood, and renders trees more liable to be broken by the wind or other causes.

One effect of the working of these birds on a tree is to cause a slight swelling of the bark which, if the bird continues its operations, in time develops shelf-like girdles. Then, too, buds are apt to start from the edges of the holes drilled and in some cases produce so many shoots as to disfigure the tree.

Neither orchard, ornamental, nor forest trees are spared by these birds and injuries done by them become serious when they affect the commercial value of the trees. The birds are fond of cone-bearing species and

oftentimes kill pines by making so many holes that the trees bleed to death. Spruces, if not killed, are weakened and made unsightly, while many beautiful and valuable ornamental conifers are destroyed or seriously defaced.

GENUS SPHYRAPICUS: RED-NAPED SAPSUCKER.

Red-Naped Sapsucker: *Sphyrapicus varius nuchalis*.

FAMILY—WOODPECKERS.

THE western bird which most closely resembles the eastern species (yellow-bellied) is the Red-naped Sapsucker, found along the Pacific Coast as far south as northeastern California, in central New Mexico, and western Texas; winters south to central Mexico and casually in Kansas.

The male of this species differs from the Yellow-bellied in having a red patch below the black on back of head, in having the red throat-patch separated from the white line on side of head, by a black line, and in having the under parts white, or yellow-tinged. In the female the red nuchal patch is smaller, or wanting, and the red throat-patch is also smaller. The young have the throat-patch clouded with dusky and the other bright markings wanting or very pale.

In habits the eastern and western birds are similar, Red-naped delighting in the sap of fir and pine trees found in the mountains, although he also frequents orchards and other lower altitudes, being especially fond of being near a stream.

Dawson, who has studied the habits of this bird in Washington, says that it excavates a gourd-shaped nest in decaying wood of a live aspen from 5 to 30 feet from the ground, making the entrance about one and one-half

inches wide, and the hole from 8 to 10 inches deep, without lining.

GENUS SPHYRAPICUS: RED-BREASTED SAPSUCKER.

Red-Breasted Sapsucker: *Sphyrapicus ruber ruber*.

FAMILY—WOODPECKERS.

By far the most beautiful of the Sapsuckers is a western bird which is found along the Pacific Coast and as far east as the western slope of the Sierra Nevadas. In many respects he resembles the Red-Naped, being about 9 inches long and having black back, wings, and tail heavily marked with white, the belly being yellowish, but the person so fortunate as to catch a glimpse of this gorgeous fellow thinks not of such minor details as back and wings, but only of the brilliant red which suffuses head, neck, and chest, and seems to envelop his whole body. No other western bird has so much carmine in his make-up so there is no danger of confusing him with anything else.

The females are similar but in the young the brilliancy is toned down to a claret hue.

Only a few times have I seen this beautiful Sapsucker in my neighborhood and when I have come upon him I have forgotten any bad traits that he may have and, more than that, I have felt that gladly would I sacrifice a few trees if, only he would come to my garden. But though these birds sometimes venture down into the valleys of Southern California in winter-time, they are not nearly so abundant as the lover of the beautiful would wish, preferring the high mountain altitudes where they nest at an elevation of from 5,000 to 8,500 feet.

Prof. Beal tells us that this bird, like its eastern



YELLOW-BELLIED SAPSUCKER.



Copyright by Brown Brothers.

RED-BREASTED SAPSUCKER.



THE STOREHOUSE OF THE CALIFORNIA WOODPECKER.

cousin, has the habit of removing patches of bark from certain live trees, usually willows, for the sake of the cambium and the sap which exudes, and that it also eats the insects attracted by the sap, which are mostly bees, wasps, and ants.

In 24 stomachs examined from September to March, inclusive, 75 per cent of the annual food consists of ants, the average per month being 40 per cent of the whole diet.

Though these birds fall far below some members of the family in economic importance, since they do not help in the destruction of the worst orchard and forest pests, on the other hand, they do not feed upon fruit or vegetables. In fact, their only bad habit seems to be their sap-sucking proclivities.

Dr. Joseph Grinnell in his "Biota of the San Bernardino Mountains," reports seeing these birds and their young in July in these southern California mountains. He found the characteristic boring of this species to be plentiful in alders, willows, young pines, and firs.

"Willows, which were growing in good-sized clumps near Bluff Lake, seemed to offer special attractions but, curiously enough, the attentions of the birds were confined to a single clump in a locality and not distributed among many." It seemed evident that the birds worked upon one clump so long as life lasted. One in particular mentioned by this accurate observer had all its upper branches and stalks dead above from two to four feet from the ground, the bark being weathered off and the stems left bare and shining. "This clump must have been worked upon for at least three years, for on several of the trunks, which were from 3 to 5 inches in diameter, there were three zones of borings, the latest ones lowest. Just below each of these girdlings was a ring of sprouts. Of what advantage is it to the birds to confine their attention to *one* clump of willows until it is exhausted?"

GENUS SPHYRAPICUS: NORTHERN
RED-BREASTED SAPSUCKER.

Northern Red-Breasted Sapsucker: *Sphyrapicus
ruber notkensis*.

FAMILY—WOODPECKERS.

OF course, it would never do for the west to have simply *one* species of these gorgeous birds, for the big west with its high mountains, its big trees, crystal lakes, fertile valleys, and expanse of ocean, has no need to scrimp its measure, even in the matter of bird life, albeit that bird is the most beautiful of its kind. And so we are told another Sapsucker, which is really a subspecies, and differs chiefly in having a darker, less vivid head, breeds from Alaska to the mountains of northern California, east to the eastern slope of the Cascades, wintering as far south as Monterey, California. This bird, which differs in habits not materially from all the others, is the Northern Red-breasted.

GENUS SPHYRAPICUS: WILLIAM-
SON'S SAPSUCKER.

Williamson's Sapsucker: *Sphyrapicus thyroideus*.

FAMILY—WOODPECKERS.

WHILE the east must struggle along with one species of Sapsucker, one more must be recorded for the west, making four in all. This last bird differs a good deal in plumage from all the rest, being darker and less showy. This is the Williamson's which breeds in the mountain forests from British Columbia and Montana south to southern California, central Arizona, New Mexico, western Texas, south to Mexico.

It is about nine and one-half inches long and is entirely black above, save for a white rump, long white wing patch, white specks on wing quills, and two stripes on side of head. The throat and chest are black, the former enclosing a red patch under bill. The belly is bright yellow with black-and-white stripes on flanks and sides, and the under wing and tail coverts are black and white. So different is the female that formerly she was listed as a different species, quite a predicament for her to be in had she been obliged to follow the dictates of man. Her entire body is barred with brown, or black and white, save her head which is brown, her white rump, black chest-patch, and yellow spot on middle belly. Sometimes a bird has a touch of red on the throat.

Grinnell studied these birds in the San Bernardino Mountains where he found them only among the tamarack pines of San Gorgonio peak, and among the silver firs, tamarack and yellow pines around Bluff Lake. "In the former locality the species was common for a Woodpecker, especially around Dry Lake, 9,000 feet altitude, where several nests were found. Tamarack pines were selected as nest trees, usually old ones with the core dead and rotten but with a live shell on the outside. In one found June 22, 1905, there were four holes drilled one above the other about eighteen inches apart, and one of these holes contained three small birds and two infertile eggs." From several nests found which contained varying numbers of young and eggs, Grinnell judges the full set of eggs to be from four to six. He also records that "on June 18, 1907, a nest with small young was located ten feet up in an exceptionally large nearly dead tamarack pine. This was one of the lowest of a series of 47 well-formed holes of similar external appearance, which penetrated this one tree trunk on all sides up to an estimated height of thirty-five feet. Besides these there were many smaller drillings. When once selected

by Sapsuckers a tree is surely doomed. But there is probably no more than one tree in 500 that is appropriated by the birds. We usually located the nests by watching the movements of the parent birds, which flew from their foraging places, often far distant, direct to the nest tree. The young uttered a whinnying chorus of cries when fed, and the adults, though generally very quiet, had a not loud explosive cry, more like the distant squall of a red-tailed hawk." Grinnell records one male that was going to the nest whose bill and throat was crammed with large wood ants, "not the kind, however, that are common at lower altitudes and smell so foully."

From Dr. Grinnell's testimony of only one tree in every five hundred being attacked by these birds, and because in few places in their range are any of these Sapsuckers very abundant, I do not believe that they are doing any great harm in the west.

While the right to destroy these birds should be given to any one whose apple trees, or others, are really being injured, the ordinary mortal who sees them about is not justified in destroying them.

GENUS MELANERPES: CALIFORNIA WOODPECKER.

California Woodpecker: *Melanerpes formicivorus bairdi*.

FAMILY—WOODPECKERS.

THE California Woodpecker ranges along the western coast from northwestern Oregon to Lower California and is one of our commonest Woodpeckers. It is an extremely showy bird, not because of much brilliancy, but rather on account of its striking black and white head markings and white eye. The feathers around the base of the bill

and the chin are black, bordered by a band of white, or yellowish, which form a square patch on the forehead; top of head scarlet; sides of head, surrounding the white eye, black, as are the back, wings and tail; white wing patches show in flight; under parts are white save for a black chest band which extends down the breast in uneven streakings, and along the sides. The female differs in having the white forehead patch separated from the red crown by a narrow black band. The young have two, or more, white bars on the outer tail feathers. As the birds perch above one the tail seems to be deeply forked, but when on the wing, it opens up into a fan-shape with each feather pointed. In length they are from eight and one-half to nine and one-half inches.

Of all our western Woodpeckers these are undoubtedly the most jovial and sociable, for although they are especially fond of all oak regions, because of their love for acorns, they also come into thickly settled neighborhoods to raise their families, and winter or summer their loud *Já-cob*, *já-cob*, *ja-cob*, call is a familiar and welcome sound. They are gregarious birds, nesting near each other and storing their acorns in the same tree. This tree-storing habit of these birds is extremely novel and interesting and has given them the Spanish name, *car-pintéro*, or carpenter. Carpenter-birds they, indeed, are. Selecting a decaying tree not too far from oaks, they bore holes in its trunk and limbs and then fill the holes with acorns which fit perfectly. Marvelous, indeed, is it that the bird without measure of any kind can first hollow out his hole and have the acorn fit it so tightly that it is hard work for a human being to dig it out.

The trees in my neighborhood are mostly live-oaks having long pointed acorns. These the birds hold in their bills by the large end and alighting below a hole they insert the acorn and pound it in. Not always are they satisfied with their first choice of holes. Often

they take the nut out and try several cavities before finally leaving it. This always seems such a useless waste of time. Their way of getting the nut securely lodged is to prop against their tail feathers, turn the head at right angles to the body, and with the whole body used as a hammer, bobbing up and down as the bill hits the nut, drive the acorn in. Often there are six or seven of these large birds working on one tree and as they come and go they greet each other with a lively *já-cob, já-cob*, or a sort of purring sound. Jolly good fellows they surely are. One call that they often give is a nasal quavering *Ka-rã-ãh* and *Kurráh-ah-ah*.

The theory formally advanced that the birds stored acorns for the worms they would germinate, has, I think, been given up since the birds have often been seen eating the nuts; in fact, more than half of their food for the year consists of acorns. An old sycamore tree near my home was formally used as a storehouse, being almost completely riddled with holes. In the spring these holes are empty and many shells beneath the tree show that the birds have eaten them there. Squirrels and Jays also help themselves to these stored acorns. I have seen the Woodpeckers drive meddlesome Jays away from this old sycamore.

Pines and oaks are also favorite storehouses. Even when living trees of these kinds are selected the work of the Carpenter Bird does no harm since the nut does not pierce below the thick bark.

To be sure the birds sometimes make nuisances of themselves boring into empty schoolhouses, or homes, and they also use telegraph poles for the same purposes.

The habit of these Woodpeckers, and several other kinds, of digging out holes in poles for nests has caused them to have a bad reputation among telephone and telegraph companies who claim that the birds weaken the poles. In Bulletin No. 39, Biological Survey, we are

told of a section where the Red-headed Woodpeckers had bored into 110 out of 268 poles. In Texas come complaints of the Golden-fronted and Texan, some of the poles having as many as ten holes in them. The Bureau of Census, Forest Products, is authority for the statement that "decay is the great cause of destruction of poles. It is estimated that approximately 95 per cent are destroyed by this cause and only 5 per cent by breakage or mechanical abrasion." How much the breakage is due to the weakening of posts by the birds is unknown, but the damage is nowhere as great as commonly supposed.

The engineering department of the American Telephone and Telegraph Company, to determine the effect of Woodpecker attacks upon the strength of poles, made a test in 1908 near Zanesville, Ohio, by fastening a rope around the top of the pole and pulling with a block and tackle to which a dynamometer was attached. In 9 cases out of 12 the poles broke at the ground line and not at the points attacked by the birds. It would thus seem that the injury really done by these birds to the poles is not serious enough to warrant their being killed because of it. From my observations of the California Woodpecker I believe they are doing infinitely more good than harm in ridding these same poles of insect life for they are always searching over them and are evidently finding something good to eat. In spite of these experiments with the poles, there have recently come under my observation cases of damage done by these interesting birds, and to such an extent that a permit was given for their destruction. It was found that the birds along the Arroyo near my home were making big holes in some of the poles carrying service wires. This was high up and the holes were so large that the men did not dare endanger their lives by going up them, as was necessary. Big pieces of tin were nailed

over these holes and the poles were treated with creosote in hope of driving the birds away. But it was of no avail. They persistently returned and dug other holes above, or below, the closed one and because human life seemed more important than that of the birds, reluctantly the order went forth that the birds must be killed.

The nesting habits of the California Woodpeckers are most interesting. For two seasons the same hole in a telephone pole that is daily passed by hundreds of street cars and automobiles, has been the home of a pair of these birds. There are plenty of oak and other trees nearby, but the birds seem to have a fondness for this pole which is near a group of them on a busy corner. The hole is about thirty feet from the ground and is badly worn and split down. From a small round opening it has become an almost square one nearly twice as large as needed.

While these birds do not ordinarily nest later than July this pair had squealing young in the nest when I discovered them on September 11. It was after six o'clock when I first saw the old birds flying through the air after insects and stopped to watch them. Sometimes they flew out in big circles, returning, flycatcher fashion, to the place from which they started; sometimes they flew straight up into the air and tumbled back, oftentimes catching themselves suddenly in their downward flight, and darting forward. I thought, as I watched them, how remarkably graceful they were for Woodpeckers and how much they foraged like the true Flycatchers. As I watched I was surprised to see them go to the pole and feed something within.

Surely September was a queer time for these birds to be nesting. The next day I visited the nest-pole and for one hour, from three o'clock until four, watched the birds. I noticed that a Woodpecker was resting on the wire above the nest, and that two others were busy

feeding. This resting bird was a trifle smaller and looked like a young bird, the black on the chest being more marked with white than in the case of the others. Presently he flew away and I thought no more about his presence until all three birds came to the wires at once and after the two parents had fed and left, this third bird went into the hole and stayed there.

It was the habit of the adults to fly about in the neighborhood inspecting the poles, or flying through the air, for most of the food. Sometimes they were out of sight but they did not stay long. When a bird came he, or she, popped into the nest, stayed a minute and came out, sometimes giving the *já-cob* call, which both birds used.

After the third mysterious bird had gone into the nest I kept my eyes riveted upon it so as to know how long it stayed in the pole. When the birds came to feed they did not go inside but reached over and fed, then left. Three times one of them did this and the fourth time, when the male came, he stood on one side of the hole and I heard him give low guttural notes. It seemed quite evident that he was saying: "See here, you young scamp, it is high time that you were coming out of there. Let me get in and attend to your brothers and sisters as I should!" Presently the truant young, for such he surely was, appeared in the doorway and, with open mouth, begged for just one bite. "Please don't scold, Father dear," I felt sure he was saying, "it was so nice and cozy down there and the children were glad to have me—really they were." But the otherwise indulgent parent was unrelenting and the third bird, no longer mysterious, flew out on to the wire while his father went inside.

Just to prove that he was not all a baby, the former nestling turned in and helped feed. Several times he went into the hole and came directly out. I might have

thought that he was in there in hopes of getting fed had I not seen distinctly a big fly in his bill as he entered. Not only did he differ from the old birds in the ways mentioned but as he entered the hole several white marks showed plainly on the underside of tail feathers. Once more he stole into the nest and stayed eight minutes before they got him out. The first time it had been twenty minutes.

In an hour's watching the birds fed twenty-eight times, the shortest interval being one-half minute, the longest eight. In nine minutes they fed eight times. Surely with three birds working at that rate the nestlings ought to thrive.

On the fifteenth, when the young must have been about ten days old, they were fed twenty-four times in fifty-eight minutes. They were now being fed mostly acorns which the adults took from the poles nearby, sometimes digging them out in pieces, and sometimes taking them to the top of a flat pole where they pounded away for some minutes before coming to the nest with their bills stuffed full of the white bits. From this time until the young left the nest they were fed mostly on these acorns. Sometimes the birds flew to an oak tree where they took the green acorns and brought them to the poles. I believe, however, that they were feeding the more seasoned ones to the young.

On the twentieth I was extremely interested to see the male eating *black scales* from a pepper tree about a block from the nest.

At this time a big young one was in the holeway and I was told that two of the nestlings were found at the foot of the pole. While it seemed hardly credible that two of them should have been pushed out, there proved to be only one that left the nest, which was either late on the twenty-fifth, or early on the twenty-sixth of September.

I found the little fellow flying, in a rather uncertain way, from pole to pole, where he hopped around, and took the food brought him by the old birds. It had two or three white bars on the black outer tail feathers, and a patch below the red crown was *gray*.

It would seem that this late nesting of the California Woodpeckers is not so unusual as we may have believed, for on the nineteenth of October I found another pole, two blocks farther down this busy thoroughfare, where noisy young were being fed. One was leaning well out of the nest. Nuts were being fed here, but once I saw one bird fly down through the air nearly to the ground and come back, a large, long-legged insect in its bill.

GENUS ASYNDESMUS: LEWIS WOODPECKER.

Lewis Woodpecker: *Asyndesmus lewisi*.

FAMILY—WOODPECKERS.

IN the Lewis we have another western bird, one that ranges from southern British Columbia and southern Alberta to Arizona and New Mexico, and from the inner coast ranges of California to the Black Hills, South Dakota, and western Nebraska; in winter to southern California, western Texas, and Mexico; casual in Kansas.

They are handsome birds about eleven inches long and so different in plumage as to be unmistakable. The upper parts are an iridescent green-black, save for a gray collar which extends down on the breast. A patch of rich crimson surrounds the bill and eyes, and the lower breast and belly are resplendent in pink, or carmine hues. The plumage of the lower parts is harsh and hair-like, giving the bird an unkempt appearance. The

young lack the red on the head and have less on the under parts, the neck collar also being missing.

In its habit of eating acorns, as well as storing them; also in its way of catching insects on the wing, flycatcher style, it closely resembles the California Woodpecker. In its fondness for ants it is more like the Flicker. I am somewhat loath to report its fondness for apples, and that this taste has caused many of the tribe to be killed.

Usually, the birds are found in the high altitudes among the pines of the mountains, but in fall they band into small flocks and come down to the oak regions, and stray into the valleys.

The winter of 1920, during February, one of these handsome birds was seen for several days in the more open region at the head of a canyon in Pasadena, where it seemed at home on the telephone poles. To the dwellers in the valleys these birds are rare enough to make the finding of one of them send a thrill through the bird-lover.

Dr. Merriam tells us that the fondness of these Lewis Woodpeckers for apples causes them to descend in flocks upon orchards, especially those of the higher foothills, and if left to themselves, they will destroy all the fruit. In Siskiyou County, California, these birds were so abundant and so destructive that during the ripening of the fruit gunners employed to shoot them frequently kill twenty-five in a day. From Oregon comes the report that in one orchard from twenty-five to fifty birds were killed every day for from one to two weeks. Such slaughter seems, indeed, terrible and makes one wonder if some other plan cannot be devised to check these ravages on the apples. Especially since the birds are known to open the apples for the coddling moth worms which they contain, and to eat other insect life. Even if at times some Woodpeckers do harm in orchards we must not for-

get that they pay for all they get and that these same orchards would be worm-eaten without the birds.

GENUS COLAPTES: FLICKERS.

THE Flickers are the largest (save for the Ivory and Pileated), best known, and most widely distributed members of the Woodpecker family. They are not typical Woodpeckers, being particularly fond of ants, which they eat in great numbers. The bills of these birds are slightly curved and the tongues have fewer barbs than most members of the family. The long tongue is studded on the upper surface with fine points which turn backward, and the salivary glands are large so that a bird has only to run its saliva-coated tongue into an ant hole to reap a harvest of these little pests, as many as 5,000 of which having been found in the stomach of a single bird. Preferring ants to acorns, or grubs, for which it must bore, it is often seen on the ground and is the most terrestrial member of the family.

Flickers are friendly birds that are fond of the open country, rather than the deep forests, and come freely to orchards or gardens, sometimes nesting in boxes put up for them, or in some stump, or tree, near mankind, placing the nest from a few feet up, to a great height.

Prof. Beal tells us that their flesh is considered good eating and that formerly quantities of them were killed when wild blackberries were ripe, the birds' fondness for the fruit making them unmindful of an approaching enemy. Fortunately, most States now have laws protecting these handsome and interesting birds.

GENUS COLAPTES: RED-SHAFTED
FLICKER.Red-Shafted Flicker: *Colaptes cafer colláris*.

FAMILY—WOODPECKERS.

THE Red-shafted Flicker is a common bird on the Pacific Coast and ranges as far east as western Texas, Kansas, Nebraska, and South Dakota. It differs from the eastern bird, which is commonly known as the Golden-wing, in having under wing and tail shafts a brilliant red, instead of yellow, and in having the mustaches on the side of the head red, instead of black. The red band across the back of the neck is, also, missing in the normal bird, but specimens are often found that have both red mustaches and red neck band, or in some other way grade into the eastern form. The geographical dividing line between these species is not well defined, each bird overlapping the other's range and straggling into its territory. The two forms meet on the Great Plains and along the eastern edge of the Rocky Mountain region, and intermingle in all degrees of hybridism.

These birds are from twelve to fourteen inches long and the prevailing color of head and body is brownish, the back being barred and the under parts spotted, with black; tail, black; rump, which shows conspicuously in flight, is white; chest is marked with a black crescent; mustaches, under sides of wings and tail are red. The female is similar but usually has a buffy or brown stripe at the side of head (malar) and the young are without this or mustaches.

In its fondness for ants and its habit of staying much on the ground the Red-shafted Flicker resembles its eastern cousin. It seems to have little fear of man, nesting in eucalyptus, sycamore, or other trees about the

grounds in not too thickly settled communities. Sometimes the house, itself, is dug into for nesting purposes, or sleeping quarters, or as it would almost seem, for the mere joy of digging. This habit of boring into trees has caused these birds to have a bad reputation in some communities. I would suggest placing heavy wire screening under the eaves, or elsewhere, to prevent their doing harm, rather than killing these otherwise useful and interesting birds.

The white rump showing in the undulating flight and the flash of red on wings and tail will identify these birds as far as seen. The common call of the adult Flicker is a sort of blood-curdling, high-pitched one which is variously interpreted as *pe-auk*, *wick-up*, *quo-ak*, *kee-yer*, and *pee-up*. It is decidedly startling as it rings through the air, often being heard for a great distance. The call which gives the bird its name is not so startling and when heard at a distance is rather pleasing. *Flicker, flicker, flicker, flicker*, the bird calls, or *wich-ah, wich-ah, wich-ah* as sometimes it seems to sound. *Clape* or *Kla-ap* is also one note used, as well as a rapidly repeated mellow *chŭ, chŭ, chŭ*.

The courting actions of these birds are elaborate and ceremonious, as well as often amusing and ridiculous. Frank L. Burns, who has made an exhaustive study of the habits of the Flicker, says:

"The male alights close to the female, often choosing a rather slender and leafless horizontal branch as best suited to an unobstructed view of his graceful form and gay plumage. The female assumes indifference, or the silence, dignity and alertness of a critic, while the male bowing, hopping, prancing, dancing, strutting, flirting his wings, pleads and urges his suit with flickering, wicuping and hickuping notes; finally he slides up to her, she coyly sidles away, and perhaps takes wing, followed by the one or more suitors to another tree, where the whole

performance is repeated." In due time the female shows her preference for one of the several males who may be courting her, and often joins in with the bowing and singing of her accepted lover, aiding him in driving away the other males, if they have not already taken their departure. Instances have been recorded where two, or more, females do the courting, using the same methods as do the males.

Mrs. Althea R. Sherman, of National, Iowa, has for many years watched the nesting habits of the eastern Flicker, and has faithfully recorded the same in a paper read before the A. O. U. and afterwards published in the *Wilson Bulletin*, of Oberlin, Ohio. Miss Sherman fixed up boxes in her barn which the birds used for nesting purposes, and bedrooms, it being their habit to spend the night in holes. Extracts from Miss Sherman's paper are here given.

The usual number of eggs laid by the southern Flicker is five or six, while the northern lays from six to nine, although sets of ten are not unusual and as many as fourteen have been found. Quite often some of these are infertile.

The brooding does not begin until the sixth egg has been laid, but from the laying of the first egg one of the birds stays in the nest to guard the treasures. Both birds share in the incubation and they are close sitters, seldom allowing the eggs to be uncovered. The brooding bird often remains from one to two hours on the nest and when the other bird comes, it heralds its approach by a soft *wick-ah-wick* note which the bird inside answers.

The brooding bird puts in its time sleeping, the female resting her bill among the feathers of her neck, while the male assumes various postures. One, which seems to be a favorite, is to lay the head flat upon the bottom of the nest.

Quite often the night brooding is done by the male, the female roosting in one of the other boxes, but occasionally the birds change places.

Usually the eggs hatch in ten days after the laying of the last one, although they have been known to hatch in nine days, and again not until eleven or twelve days have elapsed.

Until the young are about eleven days old they lie in a circle in the nest, their long necks stretched over each other; then for nearly a week they press against the side of the nest. When seventeen or eighteen days old, their claws having acquired a needle-like sharpness, they begin to cling to the walls of the nest, and when three weeks old they are able to climb to the hole and there receive the food from the parent.

Before this baby Flickers have been most peaceable little fellows but now, for the first time, they are giving the adult *pe-ap* call and are showing decided pugilistic tendencies toward each other.

Some broods are more quarrelsome than others. "Their battle-ground is in the vicinity of the hole. The one in possession of this coveted spot maintains his supremacy there by occasional withdrawals of his head from the hole in order to deliver vigorous blows on the heads of all within his reach, causing them to shrink downward, or, in the case of the weaker ones, drop to the nest below. When the hole is large enough for two heads, a vigorous battle often ensues between the owners. After all it is only the struggle for maintenance in which all must share and we glory in the spirit of the little Flickers."

From soon after the young are hatched, until they are two weeks old, they keep up a hissing sound. At first it is very faint but grows stronger and stronger as the nestlings grow, and is kept up day and night. The old bird upon taking the nest "croons a lullaby" to these

noisy babies, and keeps it up as long as it stays awake. It has no effect in lessening the hissing of the bantlings. Perhaps it is not the intent of the old bird so to do; instead it may be a Flicker concert.

Other notes the young Flickers have, one being a whine and another a chuckling noise given when the little one seizes the food-bearing bill.

The common call of the adult Flicker is a sort of blood-curdling, high-pitched one which is variously interpreted as *pē-auk*, *wick-up*, *que-ak*, *keé-yer*, and *peé-up*. It is decidedly startling as it rings through the air, often being heard for a great distance. The call which gives the bird its name is not so startling and, when heard at a distance, is rather pleasing. *Flicker-flicker-flicker-flicker*, the bird calls, or *wick-ah*, *wick-ah*, as it sometimes sounds. *Clape* or *cla-up* is also one note used, as well as a rapidly repeated, mellow, *chŭ*, *chŭ*, *chŭ*.



HAIKY WOODPECKER.



COSTA HUMMINGBIRDS ON NESTS.

Order Macrochires: Goatsuckers, Swifts,
Hummingbirds, etc.

Suborder Caprimulgi.

GENUS PHALÆNOPTILUS: HUMMING-
BIRDS, GOATSUCKERS, ETC.

Poor-Will: *Phalænoptilus nuttalli nuttalli*.

FAMILY—CAPRIMOLGIDÆ: NIGHTHAWKS,
WHIP-POOR-WILLS, ETC.

THE members of the Goatsucker family are so different from all others that they are easy of identification, if one is so fortunate to come upon them. The Chuck-will-widows and Whip-poor-wills of the east and the Poor-Wills of the west are nocturnal birds, preferring to sleep on a limb in a cool wood or on the shady ground, in the day time and come out at night to hunt on swift wings the moths, beetles, gnats and such-like that form their food. It is also as dusk approaches that the listener hears the plaintive cry in which the bird calls its name in quick rapid succession. It is so different from anything else in Nature that once heard it cannot be forgotten, or confused with other bird calls.

Nuttall's Poor-Will breeds from the western portion of the Great Plains west to the Cascade-Sierra ranges and up into British Columbia; south to southern Arizona and Texas; west to eastern California east of the Sierra; winters from southeastern California and southern Texas to central Mexico.

The Dusky Poor-Will (*Phalænoptilus nuttalli californi-*

nicus) is common in summer in California west of the Sierra Nevada from about latitude 40° south to the mountains of Lower California and occurs throughout the winter in the foothill regions of southern California. The birds are seven or eight inches long with dark blackish upper parts which are barred with finely mottled grayish-brown and distinct black arrow-shaped markings; the middle of crown, sides of head and throat are black, and a throat patch is bordered with black; tail feathers, except middle ones, tipped with black with buffy under-tail coverts; under parts barred. The bill though rather short is wide so that the mouth is enormous for size of bird. Stiff bristles at base of bill enable the birds to better secure the insect food upon which they live. They make no nest but lay their two pink-tinted eggs upon the bare ground. The newly-hatched young so blend with the lights and shadows of their surroundings that they are well concealed. One might easily mistake them for a fallen leaf.

To most bird lovers the Poor-Will is unknown except by name, but to one living near the wooded foothills the plaintive unusual call, "Poor-will, poor-will," given rapidly, is a familiar sound of the evening. This is one of the birds that is worth while hunting but it is far oftener heard than seen.

GENUS CHORDEILES: PACIFIC NIGHTHAWK.

Pacific Nighthawk: *Chordeiles virginianus hesperis*
(Grinnell).

FAMILY—NIGHTHAWKS, WHIP-POOR-WILLS,
ETC.

NIGHTHAWKS, though belonging to the same family as the Poor-Wills, are much more often seen than the latter.

Though they also come out at night to pursue their prey among the insects of the air, they do not wait until it is really dark but may be seen flying late in the afternoon, and venturing out also on cloudy days, where they skim over marshy meadows, lakes or sage-covered uplands in their graceful swallow-like flight. In the east they are often seen in the city streets circling among the big buildings, where they lay their eggs on the flat graveled roofs in a most friendly way. While in most cases our western birds are not so friendly, yet in their northern ranges they are invading the cities as do their eastern cousins.

These birds are summer residents only, and in their southern range seen only in migration.

The Pacific Nighthawk breeds from southwestern British Columbia south along the coast to northern California and in the Sierra Nevada south to the San Bernardino Mountains, southern California. Winter home unknown. They are about nine inches long and have gray upper parts which are mottled with gray and buff; tail is banded with white near the tip, except the middle feathers; wings have white patch; the throat is white, the chest black and the belly barred black and white. The feet of the Nighthawks, like the Poor-Wills, are too weak and small for perching, so the birds spend their resting hours squatting lengthwise on a limb, never perching. The eggs are mottled and are laid on the ground, or roof. The call note is not so pronounced as the Poor-Will although they keep up a sociable short note as they fly about. The long narrow wings with the conspicuous white spots make the bird easy to identify.

GENUS CHORDEILES: TEXAS NIGHT-HAWK.

Texas Nighthawk: *Chordeiles acutipennis texensis*.

FAMILY—NIGHTHAWKS, ETC.

THE Texas Nighthawk is found in the lower altitudes in summer-time, being especially numerous on the southeastern deserts and in the San Diegan district, California. It occurs as far north as Mendocino, Stanislaus and San Benito Counties, California. It is smaller than the Pacific Nighthawk but is unmistakably a member of this family. We once saw one of these birds resting on a fence, the last of May, as we drove through the San Joaquin Valley in Tulare County.

On February 16, 1920, three of these birds were observed in the San Fernando Valley, Los Angeles County, this being a very early record for them.

SUBORDER CYPSELLI.

FAMILY—MICROPODIDÆ: SWIFTS.

THE ninety-odd known species of Swifts are distributed throughout the greater part of the world but are most abundant in the tropics. About one-third this number are American but only four advance north of Mexico. Some Swifts nest in colonies and most species are associated in companies, at other times of the year. Hollow trees and caves are the natural nesting and roosting-places of many species, while others fasten their nests to the under surface of palm leaves, and the East Indian Tree Swifts attach their nest to a limb. Most Swifts appear to employ the glutinous secretion of the salivary glands in nest-construction and the edible nests of the

Swifts of the genus *Collocalia* are composed entirely of this substance.

Swifts lay white eggs and the young are naked when hatched. They feed entirely while flying, and with their unusually long wings and small, compactly feathered bodies possess unrivaled powers of flight. They are popularly confused with Swallows, but the resemblance is only superficial and exists chiefly in the similarity of flight and feeding habits, while the structural differences between the two are numerous and important. *Chapman.*

GENUS CYPSELOIDES: BLACK SWIFT.

Black Swift: *Cypseloides niger borealis.*

FAMILY—SWIFTS.

THE Black Swift is a western bird, breeding from southern British Columbia and southern Colorado south to central Mexico, wintering in southern Mexico.

It is about seven or seven and one-half inches long, has the tail slightly forked, is dusky or blackish, lighter on head and neck, with the forehead hoary, and a velvety black space in front of the eye. The young resemble the adults but have the feathers tipped with whitish. The wings of these birds are six and one-half inches long, or nearly as long as their entire body.

Dark creatures of the air these Swifts, indeed, are as in large straggling flocks they search for food. Sometimes they fly low and again they hunt thousands of feet up in the air where they are heard, rather than seen.

Although they nest in the mountains in various parts of the west, their nests are placed on the face of inaccessible cliffs so that little is known of their nesting habits.

GENUS CHÆTURA : CHIMNEY SWIFT.

Chimney Swift: *Chætúra pelágica*.

FAMILY—SWIFTS.

PROBABLY every one in the eastern United States is familiar with the Chimney Swift, or Swallow, as it is often erroneously called, since it is an abundant summer resident as far west as eastern Montana and eastern Texas.

It is rather less than five and one-half inches long and is a sooty-gray, which becomes lighter on the throat. The shafts of the tail feathers extend beyond the vanes, thus enabling the birds to prop themselves against the chimney, or other surface, in the way the Woodpeckers do against the trees.

In its manner of skimming through the air and in its habit of destroying vast numbers of insects which no other birds could obtain, it resembles the Swallows, and we cannot wonder at their being mistaken for them; yet we are told that they are constructed much like the dainty Hummingbirds and so belong in a group with them.

They have gained their name because of their fondness for building in chimneys. The nest is a shallow affair which is made of twigs and glued by the birds with a sticky saliva which Nature has given them for that purpose. The manner in which they obtain these twigs is most interesting. Instead of picking them from the ground, or other available place, they break the dead pieces from the trees with their feet while they are flying at full speed. Rather, the bird seizes the twig in its feet and the impact of the body breaks it off.

Many people cover their chimneys to avoid these birds nesting in them. They also spend their nights in these

dark shafts, clinging to the sides. A whole flock will circle in the air, round and round, until they are above the desired place, then suddenly, with a concerted swoop, dive into the chimney and only their noisy twittering proclaims their presence.

Henshaw says that any bird-lover may solve an ornithological riddle by telling where these Swifts spend the winter. They come in the spring, they go in the fall and at present that is about all we know of the matter, save that they do not hibernate in hollow trees, as many have believed.

I might add that neither do they bury themselves in the mud for the winter months, as has, also, been believed by some of our old-time writers.

GENUS CHÆTURA: VAUX'S SWIFT.

Vaux's Swift: *Chætura vauxi*.

FAMILY—SWIFTS.

THE Vaux Swift is the western representative of the Chimney Swift, breeding from British Columbia to the Santa Cruz Mountains, California; being rare or casual east of the Cascades and the Sierra, and migrating through Lower California and Arizona, and wintering in Central America.

It is scarcely five inches long and the upper parts are a sooty brown which becomes lighter on rump and tail; the under parts are gray, lighter on the throat.

It is not so civilized, or abundant, as its eastern cousin, using hollow trees, mostly, as nesting sites, although nests have been found in chimneys. Their manner of building a bracket-like basket and cementing it on with saliva is the same as that of the eastern species, the only

difference being that wood, rather than bricks, is used for the support.

This Swift is only about half the size of that other western member of the family, the Black Swift, and is sometimes found in flocks with the latter. Dawson says that the rapid erratic flight and bow-and-arrow shaped position in flight is distinctive, although careful discrimination is necessary while the birds are a-wing to differentiate them.

GENUS AERONAUTES: SUBFAMILY MICROPODINÆ.

White-throated Swift.

FAMILY—SWIFTS.

As if to make up for the lack of the common chimney-dweller of the east, the west is given still another member of this peculiar family. This bird, the White-throated Swift, breeds from southern British Columbia south to Lower California, and from the Pacific Coast east to the Black Hills and western Nebraska; wintering from southern California, south.

It is larger than the preceding, being nearly seven inches long. The tail is about half as long as the wings, is forked, with stiff and narrowed, but not spiny feathers. The upper parts are blackish, as are also the sides, while the throat, breast, patches on wings, and sides of rump are white. These white markings help to distinguish these Swifts from all others.

They are, indeed, birds of the high altitudes, living among the peaks and cliffs of the mountains and placing their nests in crevices or caves in inaccessible walls. The nest is saucer-shaped, is made of vegetable fibers and grasses, lined with feathers and glued together and onto

its supporting wall. In the November *Condor* of 1907 Florence Merriam Bailey tells of finding these birds nesting at the San Juan Capistrano Mission, California.

In the September, 1914, *Condor*, H. Arden Edwards tells of finding them nesting in a stump at Barley Flats, Big Tujunga Range, Sierra Madre Mountains, southern California.

The bare stub where the birds were nesting was that of an immense fir tree, about eighty feet high, and probably six feet through at the base. The sole means of ascending it was afforded by several jagged cracks in the body wood (the bark being entirely gone) and an occasional slippery knot or stub. The nest of the Swifts was in a large crack about thirty feet up, a crack which extended side-ways for several inches, then ran at right angles again. Mr. Edwards tells us that the nest he found, after prying off a section of the wood, was a typical Tree Swallow structure and would have been taken for such had not the Swifts manifested their interest in it by darting at him, swinging about his head in ceaseless flight with frightened twitterings. "The nest was composed of dried grasses, several needles from the big-cone spruce, some dried leaves, and a few feathers of a dusky white, that were evidently from the birds themselves. The dry grass was the dominating material and was woven, or rather laid, the long way of the crack. The inside of the nest was about two and a half inches in diameter, not over one and a half in depth, and was a little longer one way than the other. The whole affair was rather loosely built and there was no finish at the upper edge of the nest proper except a few coiled grasses." Mr. Edwards also says that the Swifts had a habit of suddenly darting straight down, as on the angle of a long V, and, making a half turn at the lowest point, shooting up again, in an ascent of inconceivable rapidity. Since these birds are supposed to always nest in crevices,

or on cliffs, this unusual nesting site was most confusing, especially since this was a typical Tree Swallow nest. There was, however, no doubt as to its owners since the birds were seen to go to it many times. They also flew at the intruder, keeping up angry and protesting twittering.

Mr. Edwards was led to wonder, not only why the birds chose this site, but because he saw one Swift carry a piece of grass into the hole, to also wonder if by any chance they had preëmpted a swallow's nest, and remodeled it to suit their own taste. He says, "Of one thing I am positive, there was no soft vegetable or gummy matter of any kind in the nest composition (I lifted the nest up expressly to see), such as I have seen mentioned by all writers on the subject before." Surely the ways of the feathered tribe are as unfathomable as are those of man.

One interesting thing about the finding of this Swift's nest was that five other species of birds also occupied this old stump, living in harmony together and ridding the neighborhood of insect life.

In a crack five feet above the Swifts a House Wren was raising a family of seven nestlings, while just around the tree from this nest was one containing young of the Cabanis Woodpecker. Eight or nine feet higher (making it forty-three or forty-four feet from the ground) a hole contained one egg of the Mountain Chickadee. Just around the tree and about nine feet higher up, a pair of Western Bluebirds had a cozy nest in a large cavity which contained two handsome blue eggs. Still climbing up the old tree, this daring explorer found only three feet from the top a hole from which flew a female Western Martin. This tree was, indeed, a treasure trove which any bird-lover would go far to see.

SUBORDER TROCHILI: HUMMING- BIRDS.

FAMILY—TROCHILIDÆ.

THE person who cares so little for our feathered wild life as not to know a Hummingbird has lost much of the joy of life, for these dainty-winged jewels of the air are well worth knowing, being our smallest birds.

We are told that at least five hundred species of these small birds inhabit the American continents, and that none are found elsewhere, but it is the comparatively few species that stray into our country, and especially those that are found in California, that are of interest to us. Of the seventeen species that are found, casually or as migrants, in the United States, only one, the Ruby-throated, dwells east of the Great Plains. We of California are especially blessed, for six species are recorded as nesting in the State, while two others have been seen here. The six that spend their summers with us are the Black-chinned (also called purple-throated), Costa, Anna (who also stays during the winter), Rufous, Allen and Calliope. The Floresi and Broad-tailed have been reported as seen in the northern part of the State.

The male Hummingbirds differ from the males of all other species in that they seem to entirely shirk the duties of nest-building and caring for the young. Sometimes they are seen in the neighborhood of the nest, but more frequently they disappear entirely, the mother taking entire care of the nestlings. Seemingly, these gay little charmers are the most selfish of the feathered tribe.

A Hummingbird's nest is, indeed, a work of art, being cup-shaped and made of fine plant down felted together

with spider webs, and saddled onto a twig, or some support, from a few feet to twenty from the ground. In some species the outside is decorated with lichens and, in any case, so blends with the support as to look like a knot, or part of it. Though varying in size, many of them are about one and one-half inches at widest part by one inch deep. Two bean-like white eggs are laid and brooded for two weeks. The little mothers are not close sitters, often buzzing away and staying a few minutes before returning, when they come back, flying like mad, but settling gently over the treasures, which she turns, twists, and kicks with her tiny claw-like feet, before getting them arranged to her liking.

Oftentimes the first egg is laid when the nest is quite shallow and the bird builds it up as she broods. The second egg is usually laid two days after the first, and the young hatch two days apart, the oldest leaving the nest at least one day before the other. They stay in the tiny cup three weeks, and when ready to fly forth have grown to such a size that they more than fill the little nest, and often seem in danger of falling out. Sometimes this does happen, but if you try to take one of them from the nest you will find that the tiny claws are used to good advantage, and that baby hummer has them firmly clasped into the little home.

If you have never seen a newly-hatched Hummingbird you still have something for which to live. Not for one moment could one imagine that so beautiful a creature as a mature Hummingbird could develop from the black shiny bugs that hatch from those eggs. Two little lines of black, hair-like appendages grow on each side of the back, otherwise black skin covers the body. The places for eyes are protruding bunches, and one end is almost as pointed as the other. Surely, some one has played a joke on Madam Hummingbird and substituted insects for those spotless eggs!

But as the days pass, the eyes open, one end elongates and becomes a bill, and feathers cover the black skin, until you are convinced that, after all, no prank has been played, but that those uncanny looking objects were birds, all the time.

When Madam feeds her babies, you have another surprise, for she feeds by regurgitation and you feel sure that instant death will result in consequence. Perching on the edge of the nest, she runs her needle-like bill into the mouth of the nestling, and jams it down his throat until you expect to see it come out through the nest; then, not content with this merciless treatment of innocent young she begins jabbing up and down, pumping the food from her stomach into that of the nestling. First one, and then the other is fed in this way until each has had several helpings, when the mother takes to the nest, or flies away, according to the age of the young. The birds do not feed often, frequently a half hour, or more, elapsing between feedings. Strange to say, the nestlings like this kind of jugglery and hang onto the mother's bill in an effort to get more. The young are fed for a few days after they leave the nest, but they also fly from flower to flower and delve in for themselves.

GENUS ARCHILOCHUS: BLACK-CHINNED HUMMINGBIRD.

Black-Chinned Hummingbird: *Archilochus alexándri*.

FAMILY—HUMMINGBIRDS.

THE bird in the west which is nearest related to the Ruby-throated, being the only other member of genus *Trochilus*, is the Black-chinned Hummingbird, which is found the entire length of the Pacific Coast from British

Columbia to Lower California, and as far east as western Montana and central Texas. It is a summer resident, only, spending its winters in Mexico and farther south.

The chief difference in the plumage of these two birds is that the western species has a velvety black chin, edged with a purple metallic band which flashes blue and green lights, and is in turn edged with a narrow white band. The throat patches of both birds are *rounded*, rather than elongated as in some of the Hummers. The tail is less deeply forked, the outer feathers being as short as the middle ones, thus forming a double curve. The females are similar, the western one being a trifle larger and having some of the much-rounded tail feathers slightly different. This really matters little, since the range of the two never overlaps. It is of interest to know that female Hummingbirds are larger than the males. Sometimes these females are slightly over four inches long; while the males are three and three-quarters at most.

In southern California these little Black-chins are very abundant, frequenting canyons, flower-covered foothills where grow the wild fuchsias (Hummingbird Sage) and the wild gooseberries which furnish brilliant red tube flowers to their liking. In the mountain canyons where grow gorgeous scarlet larkspurs and red pentstemons, these tiny birds, of many species, are as lively and abundant as a swarm of bees. Members of this species, also, are found at high altitudes and come freely into the gardens to rear their families.

The nest of Black-chin differs from Ruby-throat in that it is not decorated, but is rather a small yellowish ball made of plant down bound together with spider webs, and is of a spongy consistency. The buffy down found on the under sides of sycamore leaves is often used for these nests which are thin-walled and about one and one-half inches across the top. I once found one

of these nests which had a few tiny feathers woven into the inside near the rim.

This diminutive nest is quite likely to be placed on a descending branch, rather than a horizontal one, and when the twig is small, as the nestlings become larger they weigh it down until it becomes a precarious place for baby birds.

Such a nest I once watched on a lantana bush about three feet from the ground. In its original state it was beautiful but as the birds grew it flattened out until it was a saucer, rather than a cup, and the two occupants had to cling on for dear life. When they were two weeks old they became infested with tiny mites, which, I believe, are responsible for the death of many young Hummingbirds. These little fellows survived, in spite of them, because the good lady in whose yard they were, daily wiped them off their foreheads and bills, and put insect powder on the nest. Ants also attack young Hummingbirds and destroy them.

The mother of these twins had a peculiar nob near the end of her bill which proved to be pollen that had attached itself as she probed into the flowers in the foggy mornings.

I succeeded in getting several good photographs of this interesting family, one of the mother brooding being a time exposure. Contrary to the ordinary conceptions of these midgets, they are the easiest birds to photograph because they are naturally tame, and trustful of mankind.

My camera was placed about eighteen inches from the nest but a long tube attachment enabled me to stand some distance away. However, this would not have been necessary, for these birds when brooding will allow one to stand very near and will remain perfectly motionless for an indefinite time, their eyes riveted upon you. When the eggs hatch, Madam is more suspicious.

At all times Hummingbirds are inquisitive little things

but the careful inspection which I received at this time was because of anxiety for the nestlings. I found that if my head was covered I could go as close as I chose; and so I stood beside the camera, put the focusing cloth over my head, and peeked out at one side. The female was not quite sure about this arrangement and before going to the nest always buzzed noisily about my head—then satisfied, went about her feeding which even the click of the camera did not disturb.

Though I have never seen the male Black-chin help build the nest, or care for the young, I have seen a male of this species about while the female brooded. In one instance where a bird had a nest high up in a sycamore tree, several times we saw a male fly near without any interference from the brooding female, and once we saw him fly nearby, and the female left the nest and flew away after him.

This little mother often worked on her nest as she brooded; sometimes leaning over and running her bill over the outside and along the edges. It was the tiniest of buff balls, well concealed among the big sycamore leaves. It is said that the nesting of this species depends upon the abundance of flowers in the canyons and on the hillsides. If the season has been a wet one in California there will be many blossoms, and, also, many Black-chinned Hummingbirds' nests.

The courting dance of all these birds is extremely interesting and varies somewhat with the different species. It is always accompanied by a noise that is heard at no other time, and which one learns to know from all others. Often in some canyon I have heard the high-pitched, long-drawn-out whistle like the sighing of the wind, and if my eyes were as quick to see as my ears were to hear, I would discover the male Black-chinned making a big figure eight through the air, as he chasséd back and forth in his courting dance. The peculiar noise is made



1—ANNA HUMMINGBIRD ON NEST. 2—YOUNG ANNA HUMMERS.
3—YOUNG ANNA HUMMINGBIRDS.



1—BLACK-CHINNED HUMMINGBIRD FEEDING YOUNG. 2—BLACK-CHINNED HUMMINGBIRD ON NEST.

as he comes down on the lower curve and turns before the female. I fear me that she is something of a coquette, not easily won, for often after all the effort that the little male has made to attract her attention, she darts away without a sign that she has appreciated his efforts.

Another much smaller figure made by this diminutive sprite is to fly before the perching female and fly back and forth (about three or four feet) like a pendulum, his tail extended and feathers on end, while he keeps up a droning buzz which rises and falls as he goes back and forth in his short circuit. The female follows his every move by turning her head from side to side, but finally darts away, pursued by her admirer.

GENUS CALYPTE: ANNA'S HUMMING- BIRD.

Anna's Hummingbird: Calýpte anna.

FAMILY—HUMMINGBIRDS.

PROBABLY the best known Hummingbird in the west is the Anna, because in the southern part of its range it is a resident and very common about the gardens. People often mistake it for the Ruby-throated, but since it belongs to a different genus it is not so closely related as is the Black-chinned to the eastern bird.

Anna is found in California, chiefly west of the Sierras, and in migrations through Arizona. It is rather larger than the Ruby-throat, but like that bird the male has a forked tail, green iridescent back, and lighter under parts. In one important respect it differs from the eastern bird and that is that the top of the head, as well as the throat, is brilliant in color. In the case of Anna the gorget protrudes in long points each side of the throat, reminding me of a man's *Burnsides*. The

color is a deep rose-pink or cerise, which flashes forth in dazzling brightness as the bird turns his head. One queer thing about these bright patches is that in certain lights they are a velvety black; then, as the head turns, they fairly blind one with their beauty. It is as if the bird had flashed his dark lantern upon you.

The female lacks the bright crown patch and has only a narrow streak of red running down the middle of the throat from the bill. The tail is rounded and part of the feathers are white-tipped. The young males get the bright throat patch in the fall.

One distinctive thing about the Anna Hummingbird which attracts attention and puts him in a class by himself, so far as Hummingbirds are concerned, is that he actually *sings*. This song is the most amusing of all bird music, being a wheezing, grating noise which might be compared to the filing of a saw, or the effort of some insect. *Té-nit, té-nit, té-nit, tzip, tzip, tzip, tee-tee-tee-tee-tee* he squeals in a high-pitched, weak voice, which, however, carries well and can be heard for some distance if one's ear be attuned to Hummingbird efforts. I have heard the midget sing his insect song from the first peep of daybreak until dark, with only short intervals for flower-sipping. Perched on a small twig where all may enjoy him, he pours forth his lay with such evident delight that the listener, though suppressing a smile at this performance, cannot help but enter into the joy of the midget. You feel sure that the little singer believes that he is flooding the whole world with a matchless melody. How can he know that to the human listener it is a mechanical performance, repeated with clock-like regularity without one vestige of real melody? But then he is not singing for human ears; oftentimes it is simply for his own amusement. When you remember that, you are filled with a mad desire to squeeze the little darling, or in some way to apologize to him for

having scoffed at his performance. Dear little chap! What would a California garden be without him!

In his courting maneuvers he resembles the Ruby-throated, flying straight up into the air and then descending with lightning rapidity, turning with a big semi-circle with a sharp noise before the female, and again flying heavenward. This performance is repeated several times, or until the female flies away. I have also seen the male hovering in the air before his lady-love, his feathers fluffed out, while he madly *hummed* a tune.

As in the case of the eastern bird, no one has ever seen this male helping with family duties; but in my own yard males are always about, as well as nesting females, and I am inclined to think that although taking no part in nest-building, or feeding of young, he is not far away and his proximity is not resented by his mate.

These birds build from high up in oaks, peppers, and other trees, to low in rose bushes, and vines about the gardens, usually saddling the nest on a single twig, rope, vine, etc. One I watched was placed on a growing twin-peach about four feet from the ground. The bird was wise enough to pick out a late variety so that the nestlings were out and away long before the fruit ripened. Another female chose a coarse hemp string and stem of an English ivy that grew over a porch a few feet from a kitchen door that was continually being opened and closed. In short, there is no accounting for where these birds may build, there being no set rule that can be laid down for them. And, too, they are liable to be nesting at most any time of the year, eggs having been found in December, commonly through February and March, and as late as August in the summer-time.

In the manner of brooding, feeding and caring for young the Anna differs not materially from the others recorded. The nest is more apt to be decorated with lichens, although it is not always. Plant down bound

together with spider webs, with sometimes feathers inside, is the usual construction. It is rather larger than that of the Black-chinned and the walls are much thicker.

GENUS CALYPTE: COSTA'S HUMMINGBIRD.

Costa's Hummingbird: *Calýpte cóstæ*.

FAMILY—HUMMINGBIRDS.

ANOTHER of these birds that often strays into the California gardens during the summer months, is the Costa Hummingbird, which belongs to the same genus as Anna and in many ways resembles it, although it is one of our smallest Hummers, the male being only a trifle over three inches in length.

It is a summer resident from southern California and southwestern Utah south to southern Lower California and southern New Mexico. It winters in Lower California and northwestern Mexico.

Like the Anna, the tail of the male is forked, and he is a bronzy-green above, and whitish below; and like his large cousin he, too, has the color on the top of the head, as well as a long flaring ruff on the throat. These are the only two members of the family that have the brilliant color on the crown, but there is no danger of confusing them because of the size and very different coloring. Costa has an amethyst crown and gorget which flashes green lights as he darts about. The female differs not materially from other Hummer females, but is smaller, has purple spots on her throat, the tail feathers tipped with white, except middle ones—while only the three outer ones of the Black-chinned are white-tipped. It is certainly no easy matter to differentiate these little females, and we humans would appreciate

it immensely if the males would come around just often enough to make our identification unquestionable.

The courting dance of this sprite, as I have watched it in my own yard is still different from any of the others here recorded. Instead of swinging from side to side, pendulum-fashion as does the Black-chinned, he flattens his little body, flares out his tail, and shoots forward and back before the female with the regularity of a machine-driven device, keeping up the rhythmic drone, which rises and falls as he darts back and forth. The noise is not unlike that made by the Black-chinned. Both are different from anything else, and unmistakably Hummingbird efforts.

One of these bird midgets once nested in my yard weaving its dainty cup onto the stems of two mulberry leaves. At first the little mother minded my watching her, but after a few days she came and went unmindful of my presence. She had the same restless way as other female Hummingbirds of leaving the nest at frequent intervals, remaining for a few minutes, or sometimes several, before whizzing back and settling in the tiny nest. The little home came to grief just before time for the eggs to hatch and if another nest was built in the yard, I did not find it.

GENUS SELASPHORUS: BROAD- TAILED HUMMINGBIRD.

Broad-Tailed Hummingbird: *Selasphorus platycercus*.

FAMILY—HUMMINGBIRDS.

IN the mountain districts from southern Idaho and southern Wyoming to the Valley of Mexico, and from Nevada to western Nebraska and western Texas, during

the summer months, is found the Broad-tailed Hummingbird, the female of which is nearly five inches long.

Florence Merriam Bailey says that this bird has been recorded at Oakland, California, and that in the Sacramento Mountains at 9,000 feet they were abundant the last of May, feeding from the gooseberry bushes. The noise made by the wings was a metallic rattle quite different from that made by the ordinary Hummer. Though much larger than the Ruby-throat, the male of this species more nearly resembles it in coloring than any other, having the green upper parts and the rosy-pink gorget, which is *rounded* as is that of the eastern bird. The tail, however, is rounded and the feathers are broad and some of them *edged with rufous*. The female resembles the other females of this genus, differing from most of the others in having brownish sides, and rufous on outer tail feathers with a black subterminal band and white tips. Her larger size will help to differentiate her. Mrs. Bailey says that the nest is usually within 15 feet of the ground on branches of trees, often overhanging a mountain stream, made of willow or cottonwood down covered with lichen alone, or lichen, bark, leaves, and plant fibers.

GENUS SELASPHORUS: RUFOUS HUMMINGBIRD.

Rufous Hummingbird: *Selasphorus rufus*.

FAMILY—HUMMINGBIRDS.

THE very gayest of all the Hummingbirds is the Rufous, which is a passing migrant, only, in the valleys of California, but breeds in the mountains in the central and northern part of the State. This little bird even goes north to latitude 61° in Alaska to raise its family,

a thing no other member of the family does. During migrations the birds are found in Montana, Wyoming, Colorado, New Mexico, and western Texas, breeding in the mountains of Arizona.

The male is about three and one-half inches long and his prevailing color is a bright rufous, or cinnamon, the head having green lights, and the breast, below the gorget, being white. The tail is not forked but the middle feathers are broad and pointed at tips, the next to middle are deeply notched on the inner web, sinuated on outer, and the outer tail feathers are narrower than the others. To the ordinary mortal watching the bird whirl among the flowers of the garden, or orange trees, the tail feathers matter little; it is the general reddish color that is noted, and most of all the brilliant long orange-red gorget with its flashes of green lights, that catch the eye and bring an exclamation of delight from the beholder. Surely this is a fiery sky rocket, or a shooting star, come to earth.

Sometimes these birds come from the south as early as February, staying a few days before passing on. If you are in the mountain canyons in July or August, where grow red larkspurs, pentstemons, Indian pinks, painted cups, wild fuchsias, or tiger lilies, you may see large numbers of these males that are regaling themselves as they journey southward. Like others of their tribe, they are pugnacious and noisy, keeping up their long-drawn harsh notes as they forage, or fight. Though it is hard to adequately describe the notes of these various Hummingbirds, there is a difference in them which the keen observer learns to know. Some have much more pleasing voices than others. The handling of the wings, also, produces a different noise. The birds of this genus make a louder, more rattling noise.

The female Rufous might be considered beautiful were it not for her gayer spouse. She is also rufous

with bronzy lights on back, and the throat sometimes has a narrow streak of the orange-red. The middle tail feathers are green nearly to the base, while the outer ones have blackish bands, tipped with white. The young males resemble the female, but the feathers of the upper parts are edged with rusty color, rump *rufous*, and throat *red-specked*. The young females have the rump *green* and throat specked with *green*.

The nest of the Rufous Hummingbird is a beautiful little affair, made of plant down and fine mosses, bound together with spider webs and decorated with lichens. They may be placed on ferns, bushes, fir, or other trees; in fact, like most members of this family there is no accounting for location. Sometimes they nest in small colonies.

J. H. Bowles tells us that in Washington they nest as early as the middle of April, but that nests are also found in July, making it seem probable that two broods are raised by one pair of birds.

The male shirks household duties, as do others of this family. In fact, there seems to be little difference in the ways and habits of all of these tiny birds.

GENUS SELASPHORUS: ALLEN'S HUMMINGBIRD.

Allen's Hummingbird: *Selasphorus alleni*.

FAMILY—HUMMINGBIRDS.

ONE cannot help wondering just why Nature needed to have made another Hummingbird which is quite similar to *Rufous* but enough different to warrant another name. This bird—the Allen Hummingbird—differs from the preceding species chiefly in its green back and crown, which has caused it to be sometimes called the Green-

backed Rufous. The outer tail feathers are narrower and the second from the middle are *without notch or sinuation*. It breeds farther south than does Rufous, ranging the entire length of the coast from British Columbia, south, being a resident and very common on the Santa Catalina Islands, off the southern California coast. At Avalon, a popular resort of the Island, they nest freely in the tall eucalyptus trees among the tents and cottages, while the little canyons are made attractive by their presence. They are noisy little things, making a harsh sound with their wings and keeping up a sharp squeal, especially as they encounter one another. I once watched some of them bathing in their native haunts. A small stream trickled over a steep stone, forming small pools in hollows of the sides as it passed along. Here the Allen Hummers came and standing on the edge of these stone basins, they dipped forward until their breasts touched the water, which was running over their feet and through their tails. Sometimes they held themselves suspended in the air and let the water just touch their breasts. When they stood, they turned their heads first on one side, then the other, just touching the spray. It was a wonderfully pretty sight.

The chief difference between the females of Rufous and Allen's is that the outer tail feathers of the latter are narrower.

One July a young Allen Hummingbird, probably about two weeks old, was found on the ground at Avalon under a tall eucalyptus tree, and being unable to find any nest, it was turned over to me to raise, if possible. The little chap was two inches long from tip of bill to end of tail, the tail and bill each being one-half inch long. Each wing was as long as the entire body. The upper parts were green with the feathers brown-edged, rump rufous, under parts a dull buff with the throat a dark rufous. The fan-shaped tail was rufous, tipped with black.

A good deal of time was spent in moving his wings vigorously in an effort to fly. He knew no fear and sat freely upon my finger, buzzing his tiny wings, but was unable to raise himself, although he got over a flat surface by this rapid wing movement.

When I offered him sweetened water from a teaspoon, he ran out his tiny white needle-like tongue and drank it greedily. When a nasturtium was placed before him, he reached forward and ran his tongue over it, Hummingbird fashion, but its contents were weak compared to the sweetened water which he soon learned to prefer. When he was hungry he made a high-pitched *peep*.

One day he was sitting on the back of a chair before a window, when a female Allen flew to the net and tried to get in. When I made an opening for her she buzzed in and flew about the baby, then became alarmed and flew to the window between the glass and net, where we had hard work to rescue her. She was badly scared and lay, as dead, in my hand. I placed the young bird on the window ledge with the rigid female beside him and closed the glass, leaving the opening so that the old bird could get out when she felt able. The nestling paid no attention to her and she lay as I placed her with eyes open and body palpitating. Presently, I gently pulled the cloth on which she was resting, when like a flash, she was up and out at the opening, and we saw or heard her no more.

If any one has been inclined to think that because they are small, Hummingbirds are stupid little things, he is greatly mistaken, for in reality they are extremely bright. Little Buzz learned to know his spoon and to reach for it when hungry. When we had him five days he was still unable to fly and we were obliged to take him to the mainland—three hours' ride on the steamer. For this trip I fixed up a *bottle* of sweetened water, knowing that it would be hard to use the spoon.

It was amusing to see how he took to this bottle. Like all babies, he was fond of it, knowing full well that it contained his food. When I took it up he would stretch his little neck in an effort to get it, and when placed before him he stuck in his bill and drank his fill.

Several times during his stay with me, I found him numbed with cold, but a few minutes of cuddling in my hand soon revived him, proving that these delicate little creatures are tougher than many a larger bird.

I had felt all the time that I should not be able to raise him because I could not supply the insect food which he needed. But he lived on, growing and becoming a little stronger, but still unable to fly. At night I placed him in a box surrounded by cotton, for the nights were cold. On the morning of the ninth day of his stay with me, when I raised the cotton to bid him good morning, he did not move and I found that he had died just as he had gone to sleep the night before, sitting upright, with one wing partly spread. Poor little chap. He had made a good fight but needed a feathered mother's care.

J. H. Bowles reports finding a nest of this species on February 10th, 1912, at Santa Barbara. On the 13th there were eggs. This seems quite unusual since it is usually February before they are reported.

GENUS STELLULA: CALLIOPE HUMMINGBIRD.

Calliope Hummingbird: *Stellula calliope*.

FAMILY—HUMMINGBIRDS.

THE smallest bird in America is the Calliope Hummingbird, which is found in the mountains of the west from British Columbia and southern Alberta to southern

California and northern New Mexico as a summer resident; as a migrant casually in Wyoming and Colorado.

The male is scarcely three inches long and is a metallic green above, under parts white, tinged on sides with brown and green; tail rusty, but rufous at base, rounded and much wider at tip. The gorget is a beautiful rose-purple or violet, this brilliant coloring being in elongated feathers which have white bases, giving the effect of colored streaks, rather than a solid mass. The female is similar, of course, lacking the gorget, and having the rounded tail feathers greenish-gray at base with touch of rufous; black banded, and tipped with white, except middle pair, which are green, ending in dusky. Young similar, but under parts washed with rufous, and throat specked with dusky.

These midgets are fond of high altitudes, going to eight thousand feet in the mountains, where they build their nests on pine cones, or dead limbs of these trees. Dawson tells us that they also breed in much lower altitudes, he finding a nest in Washington in "the burning gorge of the Columbia at an altitude of only 600 feet."

Those who do not go to the high mountain altitudes may console themselves with the thought that they may catch a glimpse of these tiny beauties as they travel south on their journey to Mexico, where they winter.

FLYCATCHERS.

FAMILY—TYRANNIDÆ.

"THIS family consists of crested *songless* birds, that watch from dead limbs, posts, or other exposed perches, and take their prey mainly on the wing. They usually sit rather upright, with tail drooping, and wings in readiness for instant flight. The structure of the Flycatcher's bill and mouth is admirably adapted for the capture of winged insects. The bill is wide at the base, and the gape is deep and surrounded by so-called 'bristles,' which are of service in entrapping flying insects. While some species take nearly all their food on the wing, most of them also pick up insects from trees, shrubbery, and even from the ground."

Forbush.

Order Passeres: Perching Birds.

GENUS MUSCIVORA: 'SCISSOR-TAILED FLYCATCHERS, ETC.

Suborder Clamatores: Songless Perching Birds.

Scissor-Tailed Flycatcher: *Muscivora forficata*.

FAMILY—TYRANNIDÆ: TYRANT FLYCATCHERS.

IN the Scissor-tailed Flycatcher we have one of the showiest members of this large family. Because of its

beauty and great difference from the others, we cannot but regret its limited range. According to the A. O. U., it breeds from southern Kansas to southern Texas, casually to southwestern Missouri, western Arkansas, and western Louisiana; winters from southern Mexico to Panama; accidental locally from Colorado, Keewatin, and New Brunswick south to Florida.

The male is from twelve to fifteen inches long, with wings about five inches, and extent of spread fourteen and one-half to fifteen and one-half. The tail is from eight to ten inches long and forked five or six inches; hence the name, Scissor-tail, or Swallow-tail. This unusual shape, together with his manner of flight—zig-zagging through the air or flying up and down, opening and closing his long pair of scissors, make him a spectacular object. Add to this his beautiful plumage and you have a bird to please the most fastidious.

The body plumage is ash-gray, which becomes whiter on the throat; wings and tail blackish, the long outer tail feathers white with black markings; under tail coverts, wing coverts, and axillars (feathers lining the wing close to body) are salmon; head with concealed red spot and upper parts marked with red. The female is similar but smaller, and the young resemble the female but lack the crown patch.

Mrs. Bailey says of this jaunty bird: "In visiting the southwestern prairie country the scissor-tail is one of the first new birds you notice. Discovering him first perched on the chaparral you are struck by his long white tail and glistening black, white, and salmon plumage. In perching the tail is closed thin, and the black of the wings contrasts well with the bright salmon sides. He sits quietly like any every-day bird, giving only an occasional bee-like note, till suddenly up he darts into the air, and with delighted wonder you watch his odd figure and odder gyrations in the sky." "As he goes up

and down he utters all the while a penetrating scream, *ka-queé-ka-queé-ka-queé-ka-queé-ka-queé-ka-queé*, the emphasis being given each time at the top of the ascending line."

Leander S. Keyser says of the nesting habits of this handsome bird: "The nests of the Scissor-tails are set in the crotches of trees in the neighborhood of country homes on the prairie. Considering the size of the birds, their nests are quite small, not as large as the brown thrasher's, although the cup is deeper and the architecture more compact and elaborate. A friend describes a nest which he found on a locust tree about sixteen feet from the ground. It was made mostly of dry grass and locust blossoms, with here and there a piece of twine braided into the structure. It had no special lining, but the grass was more evenly woven on the inside of the cup than elsewhere.

"From three to five eggs are deposited. The ground color is white, either pure or creamy, sparingly mottled with rich madder-brown and lilac-gray, the spots being thicker and larger on the larger end. While the nest is undergoing examination, the owners circle and hover overhead, much after the fashion of the red-winged blackbirds, and express their disapproval in loud and musical calls, displaying their rich scarlet decorations."

Another member of this genus, known as the Fork-tailed Flycatcher, resembles this bird save that it lacks the salmon coloring, but is only an accidental straggler in the United States.

GENUS TYRANNUS: ARKANSAS
KINGBIRD.Arkansas Kingbird: *Tyrannus verticalis*.

FAMILY—FLYCATCHERS.

THE Arkansas Kingbird is the western representative of the familiar eastern bird, which is not common west of the Rocky Mountains. This bird is a summer resident from British Columbia to Lower California, extending east to western Minnesota, western Iowa, central Kansas, and western Texas; wintering in Mexico to Guatemala, and being found accidentally in some of the eastern States.

It is a bird of the open country, not caring for forests but preferring hilly country with trees for nesting sites. While it seems not afraid of mankind it is not so friendly as is its eastern cousin and does not so often nest in orchards. It has, also, less antipathy to Hawks and has been known to build its nest in a tree where nested one of these birds. This western bird is a little larger than his eastern cousin (length nine inches), and is quite different in plumage, being a light ash-gray above and on breast, rest of under parts bright lemon-yellow; tail black with outer web of outer feather white; concealed crown patch red. Never in my study of these birds have I seen that red patch exhibited, not even when they were driving cats or dogs from the vicinity of their nest, nor during the courting days.

For years these Arkansas Kingbirds made their nest in poles along the street near my home, using one pole until it was taken down, then going around the corner to another of the same kind. These poles were square timbers having at the top two uprights that supported the arm on which wires were strung. On the top of the

square pole, between the two uprights, the nest was placed. It was probably twenty feet from the ground and, of course, in plain sight to every passerby. Both birds helped in the building, bringing coarse twigs for the foundation, and finer material and feathers for the inside. They showed a great fancy for strings, part of which was woven into the nest, part left dangling on the pole. At one time I watched one of them trying to get to the nest with a big tangle of white string which I imagine had come from some boy's kite. There was a strong wind which once blew the string away, but nothing daunted, the bird again captured it and persevered until it was draped in, and about, the nest.

The same nest was used year after year, the birds simply patching it up.

Both the eastern and western birds are summer visitors, only, the Arkansas making his first appearance some time in March before many of the summer birds have returned.

My earliest record for one of these Kingbirds is March 19. The males usually precede the females by a week, or more.

The birds are leisurely in their nesting duties. In a nest that was started the 29th of April, the young did not leave until the 14th of June.

Their ordinary note is a loud chattering one, a sort of *Whit-a, whit-a, whit-a, wee*, given very rapidly. Both male and female use it commonly. I have occasionally heard other notes that sounded rather warlike. One, a *Bet-you, bet-you, bet-you*, also given rapidly, and another, *You-did, you-did, you-did*, sounded like a dispute in family circles. However, although these noisy calls sounded rather pugilistic I do not believe they were so intended, because the birds were most affectionate toward each other. Never have I seen in any bird I have watched such lover-like actions.

The female did all the brooding but the male was never far away, and when she left the nest to forage—for he did not feed her—he always flew nearby and guarded. Always when either bird returned to the nest pole from foraging, the guarding bird set up a noisy *Whita, whita*, fluttering the wings in ecstasy and sometimes giving little jumps from the pole in his, or her, delight. They said as plainly as if they could talk, "Oh, my dear, I am so glad you are safely back." All during the brooding, and when the young were being fed, this pretty exhibition of loyalty was kept up.

Though the male Kingbirds do not brood, they seem to take a paternal interest in the treasures in the nest. More than once I have seen the Arkansas male, when his mate had left the nest, fly onto the wire that was just above it and look down into it. He seemed so human in his interest.

For two weeks the eggs were brooded and then both birds were kept busy feeding. Sometimes both were on the edge of the nest at once. Usually they found food near the pole, but sometimes excursions were taken some distance away. One bird, however, always stayed near and guarded the nest.

Even when the birds were only a day old the birds would fly through the air and go directly and feed, which looked as if they did not always feed by regurgitation. It is quite likely that the tiny insects fed were carried in the throat and mouth, as the birds caught them, and were fed from there, rather than from the crop, as in regurgitation.

At one nest where I watched the old birds made 39 trips with food in one hour, the shortest interval being three-fourths of a minute; the longest being four and one-half minutes. This was when the young were two weeks old. Assuming that the birds carried two insects each trip (which was probably a small estimate), and



ARKANSAS KINGBIRD.



Copyright by Brown Brothers.

PURPLE MARTIN.



PLAINOPEPLA OR SILKY FLYCATCHER.



CALIFORNIA JAY AT BIRD TABLE

allowing fourteen hours for the bird's days, the youngsters were fed 1,092 insects daily. Multiply this amount by 21, the days that the nestling spent in the nest, and also by five days as an estimate of the time the old birds fed after the young left the nest, and you will have something over 28,000 insects taken from the neighborhood where these birds nested. Is it not worth while to cultivate the acquaintance of such flycatchers from an economic standpoint, if no other?

It has been said by some Naturalists that once the young leave the nest they never return. I believe this is true in most cases, but that there are exceptions. I know by observation. Late one afternoon when the young Kingbirds were about three weeks old, I saw one of them resting on the wire above the nest. Later, however, he had returned to the nest and was cuddled down among his brothers and sisters. The next morning, July 10th, about ten o'clock, one young bird flew from the nest directly over to a pepper tree about fifty feet away. The parents were not about at this time. Soon after, however, an old bird flew by the nest and instantly four fluffy youngsters flung themselves into the air—a veritable bird shower—and flew into the same pepper tree and onto the roof of a neighboring house. These babies were beautiful little birds, a soft drab above and yellow below. They seemed better able to care for themselves than some of broods I had watched in former years. For several days they stayed about and were fed by the old birds, but finally they drifted away and were seen no more.

I believe that the Arkansas Kingbirds have but one nest a year for I have never seen them use the pole-nest a second time in one season, and since they are so fond of it, it is more than likely they would do so if they nested anywhere.

I have spoken of the eastern Kingbird's reputation

for being a feathered tyrant, a reputation which Mrs. Miller, and others, think he does not deserve. My experience with these western birds is quite similar to Mrs. Miller's with the eastern. I found them to be anything but tyrants. Never have I seen them molest another bird unless that bird was one as large as themselves that was taking too keen an interest in their nesting-pole. The smaller birds they allowed to perch quite near. Cats and dogs they drove down the street, picking them on back or tail as they ran.

GENUS TYRANNUS: CASSIN'S KINGBIRD.

Cassin's Kingbird: *Tyrannus vociferans*.

FAMILY—FLYCATCHERS.

CASSIN'S Kingbird resembles the Arkansas, but is not nearly so common. The drab of its plumage is darker; it has the yellow belly; the outer web of outer tail feather is less distinctly edged, and the tip of tail is indistinctly tipped with grayish. The close observer will notice that the tips of longest wing feathers are abruptly cut out.

Prof. Beal says of this bird in Bulletin No. 44: "Cassin's Kingbird occupies in the breeding season the western portion of the United States from the eastern slope of the Rocky Mountains westward to the Pacific and north to central California and southern Wyoming. It is rather irregularly distributed in this region and is entirely wanting over considerable areas."

Like the Arkansas, it prefers open, park-like country to forests, but is said to be more of a mountain bird and to breed at higher altitudes. It winters in southern California as far north as Santa Barbara.

Economically, it has about the same value as the other Kingbirds, having habits similar to the Arkansas.

GENUS MYIARCHUS: ASH-THROATED FLYCATCHER.

Ash-Throated Flycatcher: *Myiarchus cinerascens*
cinerascens.

FAMILY—FLYCATCHERS.

THE bird in the west which most nearly represents the Crested is the Ash-throated, which breeds from southern Washington, northern Utah, central Colorado, and central Texas to northern Lower California; wintering south of our country.

It is about eight and one-half inches long; the upper parts are grayish-brown; wing quills reddish-brown and two white wing bars; tail reddish-brown, darker in middle and with outer web, whitish; throat ashy, or white; feathers on head raised, giving a big-headed appearance. The bird is slender and graceful.

Though seen as a passing migrant, only, in the vicinity of Los Angeles, he is found in the oak regions of the mesas up to about 6,000 feet in the mountains. To me this is one of the most interesting birds of the higher altitudes, his two-syllabled call note being most musical. Loud and clear it rings through the canyons with a liquidness that makes it beautiful and brings an exclamation of delight from, at least, one listener. *Beé-hue*, the birds call, as they dart through the air, the accent being on the first syllable. Other calls I have heard them give, one in particular having a tremolo effect. It is, however, the tone given in the clear mountain air which is indescribable, but most effective.

Like the other members of this genus these birds nest

in cavities and deserted holes, rather than in the open. In the desert portions of their range, Utah, Nevada, southeastern California, and northern Arizona, they use knot-holes in mesquit, giant cactus, and cavities in stumps, in lieu of trees. The nests are lined with fur, hair, rootlets, grasses and occasionally snake skins, but these are not so frequently used as by the eastern birds.

Irene Grosvenor Wheelock thinks that this flycatcher deserves the name of *tyrant* far more than does the King-bird. She says it not only drives all birds, large and small, away from its nest, but has the reputation of being a "claim-jumper." She tells of seeing the Flycatchers drive a pair of Gairdner Woodpeckers (small birds like the Downy) away from the hole upon which they were working, and take possession themselves. For a whole day the battle waged. "No sooner had the Flycatchers settled the affair and begun to line the nest with rabbit fur, than the Woodpeckers returned to the fray; during the temporary absence of the bandits they scratched out every bit of the unwelcome material, and prepared to occupy the home themselves. But, as always, the fiercer temper of the Flycatchers prevailed over the brave resistance of the Woodpeckers, and after repeated defeats, they surrendered. Afterward under the tree was found one broken egg of the little Woodpeckers, probably scratched out of the nest cavity in their energetic endeavor to get rid of the rabbit fur, and telling more emphatically than any words the story of their ruined hopes." Mrs. Wheelock tells us that this family of Ash-throats were wonderful upholsterers, padding the sides and bottom of the cavity with rabbit fur and short hairs until little space was left for the three small eggs which were laid by June 9th, and incubated by the female, alone, for fifteen days. The nestlings in this cavity proved to have astonishing ap-

petites, twenty-two grasshoppers being eaten by the three in less than half an hour.

Both the eastern and western birds, like all their tribe, are useful wherever found.

GENUS SAYORNIS: SAY'S PHOEBE.

Say's Phoebe: *Sayornis sayus*.

FAMILY—FLYCATCHERS.

SAY'S Phoebe is a western bird which is seen singly, or in pairs, in open or rocky country, preferring unwooded regions, brushy and weedy places away from the haunts of man.

They breed from Alaska south and east to North Dakota, western Iowa and Kansas; wintering from central California, southern Arizona, southern New Mexico, and central Texas, south.

The general color of Say's Phoebe is brownish-gray, the breast being lighter, the belly cinnamon-buff, under wing coverts buffish, and tail black. The call is a plaintive *pué-er*, or *phé-eur*, which it gives with twitch of tail. Though not so friendly as its cousin, the Black Phoebe of the west, its actions proclaim it unmistakably a *flycatcher*, and although not frequently seen in thickly settled places, it is not particularly shy. In most parts of southern California it is a winter visitor, only, and may be seen flying about among the empty cottages at the sea-shore, uttering its weird call; in the open valleys, or in the foothills.

They are fond of nesting about cliffs or in caves, where they place the nest on some projecting ledge. Coues calls them the Say's Pewit Flycatcher and says they use *mud* in the construction of the nest, while Dawson describes a nest he found in Washington as made

of dried grasses, moss, plant fibers, woolly material and hair. At least two broods are raised.

Beal says of this western bird: "While the Say Phoebe inhabits California throughout the year, it is locally wanting in summer in many places west of the Sierras. In the fruit-growing regions visited, the writer met with only one individual during the spring and summer months, but these Phoebes became fairly numerous in September, and increased in number as the season advanced." Prof. Beal found the birds to be almost exclusively insectivorous, and therefore very beneficial.

GENUS SAYORNIS: BLACK PHOEBE.

Black Phoebe: *Sayornis nigricans*.

FAMILY—FLYCATCHERS.

THE bird in the west which most nearly resembles in plumage and habits the eastern bird of this genus, is known as the Black Phoebe and is found as a resident along the coast from southwestern Oregon through California west of the Sierras, east through southern California and Arizona to southern New Mexico and central Texas, and over Mexico (except Gulf Coast) to Yucatan.

In southern California it is the commonest, most friendly of the flycatchers and is found everywhere—in the city parks, along the streams, in the door yards, and even in the mountains, if perchance there be a stream. Though modest in coloring, their trim, neat appearance, bright black eyes, and pleasing ways, endear them to all.

It is about seven inches long, has slaty-black upper parts, with head and breast darker; the white breast is V-shaped with the point toward the bird's head; the outer tail feathers are edged with a fine white line. The

young are similar but more gray and have white wing bars and more white on tail.

As is the custom with most members of this family, the head feathers are at times raised, giving a big-headed appearance. A row of young Phoebes perched on a wire side by side, in their immaculate black-and-white costume, with the expansion of white breast, and their dignified attitude, always reminds me of a row of courtly gentlemen in swallow-tailed coats.

The Black Phoebe is a resident in California, coming about the homes in rain or shine, heat or cold. His common call is a rather nasal *phoeb*. Sometimes, more often early in the morning, he deigns to call his name. It is, however, quite unlike that of his eastern cousin, the *phoe-bé*, *phoe-bé* being given in a quick, jerky way as if he feared that some one might discover that he bore a woman's name. Like the eastern bird it is fond of water and may be seen along streams, reservoirs, and wet places, where it darts out after unsuspecting insects, or sits on some look-out jerking its long, expressive tail and giving its unmusical notes. From the earliest peep of dawn until almost dark, the birds glean insects; flies constituting their most regular article of diet. These birds begin nesting operations as early as February and are kept busy most of the summer, since three broods are sometimes raised. The male takes charge of the nestlings after they leave the nest, while the female repairs the old home and broods more eggs. They love to come to the same nesting-site, the female patching up the old nest. I have never seen the male help with the nest-building, brood the eggs, or feed the female, she leaving the nest when hungry.

Mrs. Elizabeth Grinnell, in her "Stories of Our Western Birds," tell an interesting story of a pair of Phoebes that had used the same nest on her barn four times. Once when the bird was late in relining the nest, the

Linnets took possession, the female patching the nest up and laying her eggs in it. This did not meet with the approval of the Phoebe family and they both told the Linnets so in as harsh language as they could use, Madam Phoebe even pulling Madam Linnet's shoulder, but to no avail. Madam Linnet was there to stay, and so the rightful owners built in another place. As soon, however, as the baby Linnets had left the nest, the Phoebes again took possession. Five times the flycatchers used this nest, and twice the finches. Once this popular place was taken by Cliff Swallows.

One March, on the fourth, I found a Black Phoebe building in what seemed a most peculiar place. There were numerous brackets under eaves which she might have chosen, but instead she had selected the top of a window ledge a few feet below the gable, and in plain sight of every passer-by. This ledge was only about an inch and a half wide, making me wonder how the nest was going to be fastened securely to so narrow a place. However, nothing daunted, the female was busy at work, having already laid a good foundation of mud and grasses. In an hour's watching I saw her make ten trips to the nest, taking a white thread, dry weeds, a tuft of soft material, and fine fibers. These she deposited and worked over, without shaping. Twice she took away a bit of straw and grasses which were evidently not quite to her liking. As she worked, another Phoebe, which I took to be the male, caught flies from a neighboring roof. He did none of the building.

The next morning I watched at the nest for fifty minutes. During this time twenty-eight trips were made with material, frequently being only one-half minute apart, the longest interval being six and one-half minutes. This time things were reversed, for instead of taking fibers exclusively she made seventeen trips with mud. This she got about half a block away from a dripping

hydrant. The large pellets of mud were placed on the nest with a shake of the head and much pounding down with the bill. Fine grasses were also woven in and one long palm fiber waved in the breeze. Usually the bird came and went quietly, paying no attention to my presence. Occasionally she gave the *phæb* note as she approached.

After working at the nest for five days the family tore it down because of the mud and dirt on the newly-painted house, and after several efforts to rebuild she gave up and went elsewhere.

One June I found a Phoebe's nest at Cold Brook Camp, about 4,000 feet elevation in the Sierra Madre Mountains, which was placed under the eaves of the office. I was told that a former nest had accidentally been torn down and was left on a wire spiral that hung on the live oak tree near the nesting site. In two days the nest was back in its place, the birds having used it to build another. It was the typical mud-and-fiber affair and contained newly-hatched young which the adults were busy feeding.

GENUS NUTTALLORNIS: OLIVE-SIDED FLYCATCHER.

Olive-Sided Flycatcher: *Nuttallórnis boreális.*

FAMILY—FLYCATCHERS.

THE bird known as the Olive-sided Flycatcher breeds both east and west, being found along the west coast to southern California, Arizona, and western Texas, and also in northern Michigan, New York, and Massachusetts south in the mountains to North Carolina; wintering in South America.

The bird is about seven and one-half inches long and

has gray uppers that are tinged with olive; wings and tail dull brown; throat, middle of belly, and generally a narrow line on the center of the breast, yellowish white; rest of under parts like back. A tuft of fluffy, yellowish feathers on either flank, that is low on the side, has given the bird its name. The upper mandible is black, and the lower yellowish tipped with dark. It always reminds me of a Wood Pewee, but is much larger, being seven and one-half inches in length.

The birds frequent the forests, rather than the haunts of man, although they show no particular fear of humans. They are noisy fellows, their loud call ringing through the woods when the singer is only a small spot on the top of some high tree. From this vantage point the bird sallies out into the air in search of food. Nuttall gives the notes of the female as 'pũ 'pũ, or 'pũ pĩp, and 'pĩp pũ; and for the male an additional call of *eh'phébēē* or *'h'phéběã*, almost exactly in the tone of a circular tin whistle, or bird-call, being loud, shrill, and guttural at the commencement.

He describes a nest which he found placed on a horizontal branch of a tall red cedar forty or fifty feet from the ground. It resembled that of a Kingbird, externally made of interlaced dead twigs of the cedar; internally of the wiry stolons of the common cinquefoil, dry grass, and fragments of branching *Lichens* or *Usnea*. The young remained in the nest twenty-three days, and were fed from the first on beetles and perfect insects, not by regurgitation. When the young were able to fly they made trips back and forth to the nest before finally abandoning it.

GENUS MYIOCHANES: WOOD PEWEE.

Wood Pewee: *Myiochanes virens*.

FAMILY—FLYCATCHERS.

THE Wood Pewee is somewhat smaller than the Phoebe, being about six and one-half inches long, and is a summer resident, only, in the United States. It breeds from above our northern border to southern Texas and central Florida, west to eastern Nebraska.

To me it is the least attractive, in coloring, of any of the flycatchers, being a dark olive-brown above with wings and tail brownest; having a whitish breast which is washed with gray on sides, and two, not always distinctly marked, light wing bars.

This modest little bird is a dweller of wooded places, being found not only in the forests but coming also to the orchards, especially if they be old deserted ones that are rich in insects. Because of its habit of building in these places it is known in some localities as the "Orchard Phoebe." Seemingly it has no fear of man for it often builds in the village shade trees, and forages in the gardens.

Wilson compares this bird to the Phoebe which, he says, it resembles so much in form and plumage as scarcely to be distinguished from it, while being entirely different in manners, mode of building, etc. "The Phoebe is among the first birds that visit us in the spring, building in caves and under arches of bridges; while the Wood Pewee is among the latest of the summer birds, seldom arriving before the 12th or 15th of May; frequenting the shadiest high timbered woods, where there is little underwood, and abundance of dead twigs and branches shooting across the gloom, generally in low situations; builds its nest on the upper side of a limb or branch,

forming it outwardly of moss; but using no mud; and lining it with various soft materials. The female lays five white eggs; and the first brood leave the nest about the middle of June."

The call is a plaintive one which in the solitude of the forest is almost dismal. Wilson translates it as *peto way*; Chapman as *peé-a-wee*. All day long the bird draws out its sad, sweet song, unmindful of the heat which checks the ardor of other singers. They are solitary birds; never found in flocks.

Like the other Flycatchers, the Pewee is a gleaner of insects. All day long and as long as there is any light he is darting back and forth snapping up these pests, the click of his mandibles and his plaintive *pee-wee*, *pee-e* or *pewittee*, announcing his presence when the dusk hides his form.

GENUS MYIOCHANES: WESTERN WOOD PEWEE.

**Western Wood Pewee: *Myiochanes richardsoni*
richardsoni.**

FAMILY—FLYCATCHERS.

THE Western Wood Pewee breeds from Alaska to Lower California, spending the winter south of the United States. In plumage it is quite like its eastern cousin, being somewhat *darker* above, the shading of the sides reaching almost uninterruptedly across the breast; belly whitish; markings on wing not so conspicuous; wings and tail slightly longer. The young have the wing bars more pronounced.

While the western bird seems not averse to mankind and has been known to build near human habitations, he is not quite so friendly as the eastern bird, preferring

to build in some deciduous tree near canyon, or arroyo. If there be houses near his chosen haunt, it matters not, but if you would study his ways ordinarily, you must hunt him up.

These birds build beautiful little nests of fine materials which so blend with the branch on which they rest that one is easily mistaken for a knot, rather than a work of art. The nest of the western bird is deeper, more cup-shaped than its eastern cousin, and is usually placed on the *top* of a *living* limb (although I once found one in an upright crotch), rather than on the horizontal crotch of a *dead* limb as seems to be the favorite choice of the eastern Pewee.

One way in which our eastern and western birds differ is in the call notes and songs. Several of our species which are almost alike in plumage have quite different voices. The Pewees are in this class. The note of the eastern birds is sweet and clear, though somewhat plaintive. It is a sort of *peé-a-wee*, given in a deliberate drawling way, over and over with little variation. Evidently there is no hurry in life and yet, when you see him dart out after an unsuspecting insect, his actions belie his words.

The call of the western bird is harsher and less plaintive, and even less distinctly does he call his name. *Peú-er, treer*, he cries with monotonous regularity, which in the early morning, and late evening, gives one an almost creepy feeling. Olive Thorne Miller says of this performance: "There is little charm in the music, for it is in truth a dismal chant, with the air and cheerfulness of a funeral dirge—a pessimistic performance that inspires the listener with a desire to choke him, then and there." In the nesting season I have often heard the birds give twittering, song-like notes that were not, however, much more musical than the usual call.

At one time I watched the nesting habits of a pair

of these Pewees which I found May 12th in the Arroyo Seco, near Los Angeles. As in other cases I had noticed, the female was doing all the building, the male being nowhere in sight. The nest was on a small alder branch about fifteen feet from the ground. It was placed flat on the branch but was supported by an upright twig to which it was fastened. The bird was just starting it when I found her and during twenty-seven minutes of watching she made five trips to the nest with material so fine that I could not detect it with naked eye. Between trips she caught insects or rested on a tiny branch below the nesting site. This nesting on an exposed bare branch, or crotch, seems a family trait of the Flycatchers. Certainly it is most convenient for the bird student.

Four days later the bird was still working at the nest, although it was evidently about finished. It was a beautiful little affair, cup-shaped and trim, just matching the gray of the alder branch on which it rested.

I visited the nest several times after it was completed and the little mother was not, as yet, brooding. Finally, on the 26th, two weeks after I had discovered it, I found that nesting had begun. The bird was very restless, taking and leaving the nest fourteen times in the hour I watched her. Once she stayed on the eggs only one and one-half minutes; often it was only three or four minutes, while the longest time of staying was nine. Evidently this brooding was irksome business for so active a bird. She was in the air more than on the nest, frequently staying four minutes away, while once she was gone eleven.

The male I saw not far away, but he never came to the nest, the female doing all the brooding and looking out for her food supply as well. Though this nest was near a footpath going through this little retreat, I had felt that no harm would come to it, but a Methodist camp-meeting took up their abode nearby and when I went again the nest was gone.

Another nest of Wood Pewees which I found the last of June in the Sierra Madre Mountains, contained three well-feathered young. Like the other recorded it was built on an alder tree on a bare limb in a horizontal crotch made by a half-inch twig which grew at right angles to the branch, which was itself only about an inch thick. It was located directly over the stream and about ten feet above it. So shallow was this nest and so big were the nestlings in it that I expected momentarily to see one of them crowded out and landed in the rushing water. However, the little fellows clung on tenaciously. They were trying their wings and it was evident that when they left the nest they would fly away.

This nest-tree grew right beside the only nearby crossing so that all who went farther up the canyon must pass it by. Yet, not one in every hundred saw that cunning family. If, perchance, they looked at the limb they thought this heavier patch only a growth, so well did all blend together. I had myself passed them by more than once before the actions of the birds attracted my attention. I never saw such rapid feeding as was going on at that nest. Both birds were at it and I dared not take my eyes from the nest for fear I would miss their coming. A wire below the nest was a favorite perch. From there, when they stopped at all, they darted out and with a noisy snap of the bill were at the nest feeding. Then both birds, as they departed on another sally, gave their call, *pwé-er*, and sometimes just *pee*. In thirty-nine minutes' watching about four o'clock on July 3rd the birds fed thirty times. It was quite evident that soon the nestling would depart, and I hoped for the sake of their parents that soon they would be able to help themselves.

Prof. Beal tells us in Bull. 44 of the number of insects he saw one of these Western Wood Pewees take in three minutes. The first minute he caught seven; the second,

five; and the third, six. The air was warm when these observations were made and many insects were on the wing. The next day, when it was much cooler, only seventeen insects were taken in eight minutes.

These various observations go to show how very useful these Wood Pewees are. They are entirely insectivorous and like such pests as flying beetles and ants, moths, butterflies, gnats, flies, mosquitoes and spiders.

GENUS EMPIDONAX.

IN this genus are a group of small Flycatchers that so resemble each other in size and coloring as to sometimes deceive the most careful bird student. If they do not succeed in veiling their identity, there is a chance that they will drive the poor seeker after knowledge almost crazy before he becomes assured just which name belongs to the particular bird he is pursuing. In some cases the range of the bird will help to identify it, some being eastern and others western. At other times the note of the bird will be the best guide but since it is almost impossible to accurately describe these various calls so that the observer may be sure of them, it remains for the student of these tiny birds to go to their haunts and learn from Nature. So far as possible I will differentiate the most important and common of them.

WESTERN FLYCATCHER.

Western Flycatcher: *Empidonax difficilis difficilis*.

THIS bird breeds from Alaska south to Montana, and southwestern South Dakota to southern California and western Texas; wintering in Mexico.

This Flycatcher is sometimes called the Western Yel-

low-bellied, as well as Baird. It resembles its eastern cousin in size and coloring, being, however, paler below, the belly and under tail coverts being yellow, and the breast shaded with grayish brown. This yellowish tone of the under parts is helpful in distinguishing the bird from the other small Flycatchers since they have *white* plumage below. But in reality, seen on the wing, they all look much alike, the yellow not being very pronounced.

One June I spent a week at Camp Rincon on the west fork of the San Gabriel River in the Sierra Madre Mountain Range, Los Angeles County. There were fourteen miles of stage road which crossed the river twenty-eight times to reach this camp, and all the way along I heard the plaintive *see-rip* of the Western Flycatcher.

On the twenty-first of June we wandered in a little canyon which extended about a half-mile into the mountains and was so narrow in many places that it was little more than a trail beside a small stream. The banks rose high above our heads and were overgrown with shrubs and trees, alders predominating, but there were also rock maples, oaks, sycamores, and bays.

At almost the end of this canyon, in an alder tree which grew close beside the water, we found a pair of these little Flycatchers feeding their young. The nest was on the southwest side of the tree in a crotch made by a dead stub about a foot long. There were no leaves near it so our view was unobstructed. Although this crotch was about twenty feet from the foot of the tree, the bank rising steeply from the stream passed not far from the nesting site, and afforded a comfortable place for us to watch every move of the birds.

The nest was darker than the tree-trunk, but matched the shadow in the crotch. It was made entirely of plant fibers.

It was about 8:40 when we sat down to watch these

little Flycatchers. At that time both birds fed, one having a moth in its bill, which was given to several young. After feeding, the female sat on a nearby limb and guarded. The male fed four times in six minutes, resting on the edge of the nest one-half minute after the last feeding. As the bird fed, three tiny heads showed above the rim.

For the next eight minutes the female fed, making three trips and resting on the edge of the nest a short time. Then the male fed three times, and for thirteen minutes both birds fed in all seven times, then they seemed to divide the labor again; the female feeding for a time, then the male doing all the feeding. In the three hours and forty minutes in which we watched at the nest, I came to the conclusion that it was their way to take turn about in the feeding. Sometimes the watching bird would be seen perched in a tree not far away; at other times it was out of sight.

During three hours and forty minutes the young were fed sixty-three times, the female feeding thirty-three times to the male's thirty; the shortest interval being one minute, the longest ten and one-half.

At 9:30 when the female found the sun shining on the nest, she settled over the young and shielded them until the male came to feed. The male also did his share of shielding, at one time remaining on the nest ten and one-half minutes. In my mind there is little doubt but that the male helps brood the eggs, for I have never seen a bird that did not help incubate take the nest as did this one.

The common call of this pair of birds was a *pe-wit*, or *see-rip*, *see-rit*. This was given by the female quite frequently before and after feeding, the male using it in the same way, but not so frequently. Only once did I hear any other note, and then it was only a little varied.

The food seemed to a large extent to be large-winged

insects which were sometimes so large as to make several feedings. The female quite often foraged quite near the nest in a damp place under the bank. Both birds sat about on limbs not far from us and seemed not in the least to mind our presence.

Though the Western Flycatchers are nearly always found along the mountain streams, we are told that they also frequent the trees of the high hills where no water is found.

GENUS EMPIDONAX: TRAILL'S FLYCATCHER.

Traill's Flycatcher: *Empidonax trailli trailli*.

FAMILY—FLYCATCHERS.

ANOTHER of these tantalizing midgets known as the Traill's Flycatcher, lives in the west, breeding from British Columbia and Idaho to southern California, Arizona, New Mexico, and Tamaulipas, east to Missouri, Illinois, and Ohio; wintering in Central America, south.

In size and coloring it resembles the Acadian, being browner above and *darker* below, the gray shading quite covering the breast; bill not so broad and flat, but wing bars and eye ring similar.

The birds are fond of willow thickets of the lowlands, but are also found breeding as high as five thousand feet in the mountain canyons of the west, and in migrations go as high as eight thousand feet, as well as spreading through the valleys.

The note given by Coues is *ké-wink, ké-wink*, given slowly; and by Prof. Cook as a shrill, hurried *pree-pe-deer*.

The nest is placed in low trees or shrubs from one to eight feet from the ground, usually in a crotch or fork,

and is made of grasses, stems, and plant down, being more cup-shaped than that of Acadian.

GENUS EMPIDONAX: HAMMOND'S FLYCATCHER.

Hammond's Flycatcher: *Empidonax hammondi*.

FAMILY—FLYCATCHERS.

ON the western coast, breeding from Alaska to southern California and Colorado, is found the Hammond's Flycatcher, which passes its winters south of the United States.

It is about five and one-half inches long; grayish-olive above and slightly lighter below, with throat whitish, and belly yellowish; wing bars and eye-ring solid white; tail usually more forked than in other species; outer tail feathers usually whitish-edges externally, a character also sometimes shown in Traill's and the Least Flycatchers. The bill is smaller and narrower than any member of this genus except the Buff-breasted which is found only in southern Arizona and New Mexico.

According to Willett this bird is a migrant, only, in southern California, being seen as such mostly in the canyons and mesas along the base of the mountains. Farther up the coast it places its nest on a horizontal limb in the open, much as does the Wood Pewee, using fir trees, willows, cottonwoods and aspens. Because of its dull plumage it is sometimes called the Dirty Little Flycatcher. It most nearly resembles the Least of any of the eastern members of the genus, the call being given in a similar way but is different. Dawson gives it as *sewick*, or *Sweé-chew*; Coues a soft *pit*.

GENUS EMPIDONAX: WRIGHT'S FLY-CATCHER.

Wright's Flycatcher: *Empidonax wrighti*.

FAMILY—FLYCATCHERS.

THIS bird breeds from in the west from British Columbia south to central California, Arizona, New Mexico, and western Texas, and east to the base of the Rocky Mountains; wintering in Mexico.

It differs from Hammond's in having a wider bill, grayer plumage above and whiter below, with throat often whitish; outer web of outer tail feather abruptly paler than inner web.

Willet says it is a common summer resident in the mountains from 5,500 to 9,000 feet altitude, its breeding range extending south at least to the San Jacinto Range, being a fairly common migrant along the base of the mountains, a few remaining during the winter. They are restless midgets and seem rather to avoid detection. According to Vernon Bailey they are fond of the sagebrush in the Great Basin country, often placing their nest in a fork of the sage.

This bird is sometimes called Gray Little Flycatcher.

In the mountains of southern California, Arizona, and New Mexico a similar but larger and grayer bird is known as the Gray Flycatcher (*E. griseus*). It is rare and easily confused with Wright's.

GENUS PYROCEPHALUS: VERMILION FLYCATCHER.

Vermilion Flycatcher: *Pyrocephalus rubinus mexicanus*.

FAMILY—FLYCATCHERS.

WE turn with relief from the group of dull-colored, similar plumaged Flycatchers to one of gorgeous hue. Our only regret in regard to this gay little bird is that his range is so limited that comparatively few can enjoy his brilliant costume.

They breed from southeastern California, southern Nevada, southwestern Utah, western and southern Arizona, southern New Mexico, and southern Texas south to Lower California; accidental in Florida.

The Vermilion Flycatchers are about six inches long, and the adult male has dull brown upper parts with wings and tail blackish; the full, rounded crest and under parts a brilliant scarlet; bill and feet black; female entire upper parts brownish gray; under parts whitish, with breast gray streaked, and belly streaked with yellow, salmon, or red. Immature male like female save for outcroppings of red on crown and breast. Young with brown upper parts, feathers edged with whitish; white under parts streaked but without red on belly.

Though these birds occasionally straggle into the coast regions of southern California, they are essentially lovers of the desert, being more abundant in Arizona and Texas. Here they pursue insects after the manner of their tribe, delighting all beholders.

Suborder Oscines: Song Birds.

GENUS OTOCORIS: HORNED LARK.

Horned Lark: *Otocoris alpestris alpestris*.

FAMILY—ALAUDIDÆ: LARKS.

THE birds known as Horned Larks are so distinctively marked as to make them easy of identification, but unfortunately for the person who would know the specific name of the bird he beholds, they are divided into fourteen subspecies in America, only three of which are found in the eastern half of the United States, the rest being western birds.

All of these Larks are essentially ground birds, frequenting open stretches, rarely lighting on trees, and always building their nests on the ground. They are gregarious birds and except at the nesting season go about in flocks, *running* rather than *hopping* over the ground, rising in a compact flock, giving a sharp whistle as they go, if they are disturbed, and oftentimes circling and returning to their former feeding ground, once the disturber has passed along. Living in regions of little water, they take a *dust* bath rather than a water one. Most of them have a pleasing song which at the nesting season is given on the wing. It is this method of singing which has made their relative, the old world Skylark, famous. This Skylark has been introduced into the United States at various times, and it is believed that a few of them may still be found near Flatbush, Long Island.

The Horned Lark is nearly eight inches long, and the general color of upper plumage is a rich brown, becoming a light cinnamon on neck, rump, upper wing coverts and tail coverts, the tail itself being black with the outer vanes of outer feathers margined with white. The distinctive thing about this bird, and its allies, is the head and throat markings. The forehead, line over the eye, ear patch, and throat are a rich sulphur yellow; the fore part of crown and a tuft of elongated feathers on either side of the head, a mark from the bill which passes below the eye and then down the side of the head, and a crescent on breast, are black; the rest of lower parts are white, more or less soiled with dusky spots. The short black tufts on the side of the crown can be raised, and so have given the birds their name. Female similar but markings less sharply defined.

This bird breeds in the far north and winters, only, as far south as the Ohio Valley and Georgia. They frequent both the seacoast and large, open tracts in the interior, sometimes joining bands of Snow Buntings from which they are easily identified.

The Prairie Horned Lark (*O. a. praticola*) differs from the preceding chiefly in being smaller and paler and having the forehead and line over the eye, *white* instead of yellow, and the throat only yellowish. It is a bird of the prairies and open, barren stretches of the middle west, rather than the far east, breeding from Manitoba and Quebec to eastern Kansas, southern Missouri, Ohio, West Virginia, and Connecticut; wintering south in Texas, Tennessee, and Georgia.

Breeding in the far north but wintering south to Nevada, Utah, Kansas, and Michigan, is found the Hoyt's Horned Lark (*P. a. hoyti*), which differs from *alpestris* in having the yellow of head and neck replaced by white, except the forehead which is a dirty greenish white, and the throat which is yellow.

WESTERN HORNED LARKS.

ON the western coast are so many subspecies of these interesting birds, that the ordinary bird student will be wise not to undertake to definitely name them. Though in many cases the yellow is paler than in the case of the eastern Horned Lark, the birds all have the distinctive head marking that gives them their names and cannot be mistaken for anything else. In habits they are, also, similar.

The Pallid Horned Lark (*O. a. arcticola*) breeds north but winters south to Oregon, Utah, and Montana.

The Streaked Horned Lark (*O. a. strigata*) breeds in Washington and Oregon west of the Cascades; east in winter to eastern Washington and Oregon, south to northern California.

The Dusky Horned Lark (*O. a. merrilli*) ranges in the northwestern semi-arid districts, breeding in northwestern Idaho to northeastern California east of the Cascades and northwestern Nevada, wintering south to central California.

The California Horned Lark (*O. a. actia*) is found from the San Francisco Bay, the San Joaquin Valley, to southern California.

In the southern part of its range it is an abundant resident from the coast to the base of the mountains, occurring in summer up to about 7,000 feet, and even higher after the nesting season.

In the coast regions they occur on the tablelands above the low marshy portions near the ocean, and in the fall are seen in small flocks along the beach, and a short distance back.

On the Santa Barbara Islands a resident bird is called the Island Horned Lark (*P. a. insularis*).

GENUS PICA: MAGPIE.

Magpie: *Pica pica hudsonia*.FAMILY—CORVIDÆ: CROWS, JAYS, MAGPIES,
ETC.SUBFAMILY—GARRULINÆ: MAGPIES
AND JAYS.

THE Black-billed Magpie is one of the most striking of American birds, and will commend itself to the bird student because it is unmistakable.

The adults are from seventeen and one-half inches long to nearly twenty-two, and are a bronzy iridescent black, save for white belly and wing patches; the tail is very long and graduated; bill and naked skin of orbital region, *black*. The young lack the bronzy gloss on the head. They are, indeed, showy creatures as they fly through the air, the long graduated tail spread, and the white of wings showing in marked contrast to the black plumage.

They range from northwestern America to northern Arizona and New Mexico, and from eastern slope of the Cascades and Sierra Nevada to western North Dakota and western Texas; casual in Iowa, Wisconsin, Illinois, Michigan, Ontario, and the Hudson Bay region. Breeding range in California east of the Sierra Nevada, north to Shasta Valley, south to Mono Lake.

The nest of these birds is a marvelous affair, being a mud cup lined with grasses, rootlets, pine needles, and hair, surrounded by a globular mass of coarse sticks, sometimes as big as a bushel basket, placed usually three



Copyright by Brown Brothers.
BLUE-FRONTED JAY.

WOOD PEWEE.



CROW.

to twenty feet from the ground in willows, thorn bushes, mulberry bushes, small oaks, cottonwoods, and pines.

Henshaw says: "Magpie, as this bird is familiarly known in the west, possesses dual traits. He is beautiful of plumage and adds much to the interest of the landscape as he flies from field to field, his long tail extending behind him like a rudder.

"Of eminently social disposition, this bird is rarely seen alone. He prefers flocks of family size to fifty and upwards. In more ways than one the Magpie is like the Crow and his sagacity has developed along much the same lines. In most localities he is suspicious and wary, as he has good cause to be, for he is not a favorite with either farmer or ranchman. He is eminently carnivorous, a carrion feeder by preference, an insect eater by necessity, and he performs good service in the latter rôle. He eats also many wild fruits and berries, but he is an incorrigible thief and well he knows his way to the poultry yard. No sound is sweeter in 'Magpie's' ears than the cackle of the exultant hen that has just laid an egg, and the hen house must be well protected that keeps him from his plunder. Perhaps his worst trait, however, is his fondness for the eggs and nestlings of small birds."

Olive Thorne Miller in "A Bird Lover in the West," gives an interesting experience with these inquisitive, suspicious birds.

The Yellow-billed Magpie (*P. nuttalli*) is smaller and the bill and naked bill back of eye is *yellow*. It is found chiefly in the San Joaquin and Sacramento valleys, California.

GENUS CYANOCITTA: STELLER'S
JAY.

Steller's Jay: *Cyanocitta stelleri stelleri*.

FAMILY—MAGPIES AND JAYS.

THE Pacific Coast and the Rocky Mountain region are the homes of five varieties of *crested Jays*, which though not so handsome as the eastern species, are showy fellows, noisy and jolly, but for the most part dwellers of the mountains, although in the northern part of their range they live among the big trees in the lower regions.

The Steller Jay is leader of the clan and the others are subspecies. This beautiful blue bird is twelve or thirteen inches long with head, neck and back a dull black; lower back and under parts, blue; wings and tail deep purplish-blue, barred with black.

This jaunty bird is a resident from Alaska south into Oregon. It is unmistakably a Jay in voice and habits, but is not so friendly as either the Blue Jay or the California, although it sometimes ventures to the edges of valleys and into orchards for fruit, of which it is fond. If perchance you have a canyon ranch the bird will visit you; and if you are camping in the mountains he will not only favor you with calls (of more than one kind), but will steal bacon, butter, and everything edible in sight. The worst part of it is that he does not confine himself to robbing human beings but during the nesting season he destroys far too many young birds and eggs. According to Prof. Beal the bird eats few insects that are injurious to the orchardist or farmer and therefore has no good points to offset this atrocious bird-eating habit. More than that Mr. Dawson tells us that in Washington these feathered robbers delight in corn, cab-

bage leaves, sprouting peas, tomatoes, potatoes, or any vegetable. They have the cunning of their tribe for they watch the gardener plant the potatoes and the next morning dig them up. It is no wonder that they are not great favorites when they venture forth from their forest homes. One fiendish habit this blue rascal has is tearing open the side of the long pencil nest of the little Bush-tits and extracting its contents, an act that even the most forgiving person could not overlook.

The nests of these birds are large bulky affairs held together with mud and lined with fine rootlets. Evergreen trees or thickets, from six to fifty feet from the ground, are favorite nesting sites, although other trees or bushes are used.

Like the other members of the family, the birds make devoted parents, the female doing all the brooding while the male guards.

The common call is a harsh, discordant note which Dawson translates as *Shaack, shaack, shaack*, or, by a stretch of the imagination, as *jay, jay, jay*. A mellow *klonk, klonk*, reminds us that this bird is a cousin of the Crow. "Other and minor notes there are for the lesser and rarer emotions, and some of these are not unmusical. Very rarely the birds attempt song, and succeed in producing a medley which quite satisfies *her* that he could if he would." (Dawson.)

GENUS CYANOCITTA: BLUE-FRONTED JAY.

Blue-Fronted Jay: *Cyanocitta stelleri frontalis*.

FAMILY—MAGPIES AND JAYS.

THIS bird is found as a resident on both slopes of the Sierra Nevada from Mt. Shasta south to the San Jacinto

and San Pedro Martir Mountains, Lower California, and also the inner coast range of northern California (west of Sacramento Valley) from the Bully Choop Mountains south to Mt. St. Helena and Mt. George (east of Napa Valley).

The Blue-fronted differs from Steller's chiefly in having a blue tinge to the crest and blue streaks on the forehead. Length from eleven to thirteen inches.

They are showy, noisy birds that are seen in small groups, or flocks, in the mountains, being as fearless and venturesome as is the preceding bird.

These birds are always a delight to the bird student who visits the mountains because, as a rule, there is where one must go to see them, but during the winter of 1919-20 these birds came down into the valleys in southern California and were most sociable, coming into my garden during the month of January, and again appearing in April, which was decidedly late for them to be lingering. Though I did not find a nest myself, it was reported that these birds had nested across the arroyo from my home, on the South Pasadena side. Another pair of them nested in Griffith Park, Los Angeles, and were seen feeding young, by Miss Mary Mann Miller, during July. So far as I know this is the first record of these birds nesting in the valley.

I first saw one of these Blue-fronted in the arroyo in Pasadena on November 12th, 1919.

Still another of these crested birds is known as the Coast Jay. It differs from the Blue-fronted in being somewhat darker with the frontal blue spot restricted. The back is a warm slate gray, the wings and tail dark blue barred with black. It is also known as Grinnell's Jay.

We may look for these birds in the humid Pacific Coast strip from southern Oregon to the San Lucian Mountains, California, and east to the mountains on the

west side of Napa Valley; in the winter east to the Gabilan and Mt. Diablo ranges.

While similar in habits to the type, it is said that both the Blue-fronted and Coast Jays sometimes nest in natural cavities in trees.

GENUS APHELOCOMA: WOODHOUSE JAY.

Woodhouse Jay: *Aphelocoma woodhouse*.

FAMILY—MAGPIES AND JAYS.

THE Woodhouse Jay belongs to a group of *flat-headed* birds, all of which, with the exception of the Florida Jay, are found in the west. There are in all ten species and subspecies. Couchs, which is found in western Texas, and Arizona, which is a resident in the mountains of southern Arizona, New Mexico, and Mexico, have the tails shorter than the wings. Six of the species have tails longer than the wings. Two of these, the Blue-eared and the Texas, are found only in Texas, while the Santa Cruz is found only on the Santa Cruz Islands.

The Woodhouse Jay dwells in the Great Basin and adjacent arid regions, breeding from southeastern Oregon, southern Idaho, and southern Wyoming, south to southeastern California (east of the Sierra Nevada), Arizona, New Mexico, southeastern Colorado, and western Texas. It is a handsome bird having dull blue upper parts, save the back and scapulars (wings near body) which are slate gray; tail and under coverts, blue; rest of under parts gray, save the throat which is whitish streaked with dark gray. Back and under parts of young, darker; length from eleven to eleven and one-half to twelve inches.

The habits of these birds are similar to those of the California Jay, which will be more fully considered.

GENUS APHELOCOMA: CALIFORNIA JAY.

California Jay: *Aphelocoma californica californica*.

FAMILY—MAGPIES AND JAYS.

THE California Jay ranges from California and southern Oregon west from the eastern base of the Sierra-Cascade Range, and south to San Bernardino; an isolated (?) colony on the Columbia River of the Cascades in Oregon and Washington.

According to the A. O. U. Check List the Belding Jay (*A. c. obscura*) is the one found in southern California from the San Fernando and San Bernardino Mountains south into Lower California. Those bird lovers who regret the many subspecies into which our western birds are divided, and who have been wont to consider the common Jay of the south as the California, will be glad to have the opinion of well-known naturalists on this subject.

George Willett says: "Although the A. O. U. Check List assigns the bird occurring from Los Angeles and San Bernardino counties, south to Lower California, to the form *Aphelocoma californica obscura* Anthony (Belding Jay), I am informed by J. Grinnell that, after a careful study of the question by himself and H. S. Swarth, they have arrived at the conclusion that all the southern California birds are referable to *californica*, and that *obscura* has no standing as a bird of California."

The adults of this species are about twelve inches and have brilliant blue upper parts, save for a *brownish* back and feathers of upper wing (scapulars); under parts

white, with blue-gray stripes on the throat, and a light line over the eye. The young have the head and back brownish, tinged with blue, throat unstreaked, and chest washed with brownish.

These California birds are sociable fellows, banding together in small flocks during the fall and winter months, and visiting gardens that are near their chosen haunts, helping themselves to bread and suet at the bird lunch-counter, and oftentimes making nuisances of themselves.

In my own yard a band of these brigands are even now shouting, *Ko-rink, ko-rink, kink*, and I doubt not that they are sampling my almonds, for their fondness for these nuts has helped to place them on the non-protected list in California. Last year during August these birds began coming regularly to the yard and it was some days before I remembered that it was probably the almond tree loaded with nuts that was attracting them. The next morning when we went out to gather our crop the birds appeared on the scene and finding their liberty curtailed, they sat in a nearby eucalyptus tree and scolded us vigorously for taking their nuts.

The birds also attempt to take the walnuts but they are rather large for them and, except in the early stages, too hard-shelled. One thing they eat is of interest because to man and beast it is poisonous, and that is the castor-oil bean. I have often seen the Jays fly into the trees (they become small trees in California), pick the ripening beans and whack them to pieces on some hard substance as they hold them between their feet. They are fond, also, of acorns and have no scruples against helping themselves to those stored in a tree-trunk by California Woodpeckers, if perchance they come across such a tree in their rambles. The bird would be wise if he confined his robbing expeditions to acorns but he has a far worse trait and that is his fondness for

birds' eggs, and young tender nestlings. And, too, he is fond of hens' eggs and, being a crafty fellow, he knows that when one of these fowls cackles it means an egg, and so these blue rascals will hang around in the vicinity of the barn-yard and when the egg is laid will help themselves to it.

It seems too bad to have to record so many bad things against so handsome a bird, but Prof. Beal tells us that as a fruit eater he has few equals. Cherries and prunes are his especial delight and we must admit that he has good taste.

Prof. Beal watched in a cherry orchard from 9 A.M. to 4 P.M. on several occasions during the cherry season, and there was not an hour of the day that jays were not going away with fruit and coming for more. In a prune orchard, where a small ravine debouched from the wooded hills, a continuous line of Jays was seen passing from the hills down through the ravine to the orchard, while a return line, each Jay bearing a prune, was flying up the ravine to the woods, where, probably, the fruit was secreted and left to rot.

We are glad to know that these birds do not frequent the orchards entirely for fruit, but that they are fond of small green caterpillars, known as canker worms. It is the habit of these worms, when the limb is jarred, to drop to the ground on a thread spun for that purpose. In an apple orchard infested with these worms the Jays were doing yeoman work eating them. As they lighted in the tree the worms spun down, and the birds followed after them. In the case of one Jay they filled 90 per cent of the stomach contents.

It is well for the birds, and the ranchers, that the fruit depredations occur only where the ranch is near a canyon, the chosen home of Jays, as well as many other species. Ordinarily, I do not believe that the big blue birds do much damage to fruit. Certainly they never

molest it in our yard nor have I heard of any complaint in this neighborhood, yet they nest not far away.

The nest is a bulky affair made of twigs and grasses with an inner compact lining of fine roots and fibers, placed in low bushes or trees, from three to twenty-five feet from the ground.

Besides the *Ko-rink* call, which is given quickly with a bend of the knee, producing a bobbing motion, there are several other squeaks. One is *jay-jay-jay*, and another similar but with a more metallic ring. The bobbing up and down movement of the birds as they perch is a common characteristic and will help to identify them some distance away.

GENUS PERISOREUS: OREGON JAY.

Oregon Jay: *Perisoreus obscurus obscurus*.

FAMILY—MAGPIES AND JAYS.

THE Oregon Jay, also known as Deer-hunter, Camp-robber, and such suggestive names, belongs to a group of birds which are quite different from all others considered. They are flat-headed and the plumage is soft and loose, grayish or sooty; bills very short, not deep but wide at base. The wings and tail are of about equal length, the tail being graduated.

They are essentially camp birds, coming from their homes in the deep coniferous forests to the camps established by man in their regions, and in the most friendly, matter-of-fact way, appropriating any available thing to eat. The name of the genus (*perisoreus*) given them is from the Greek word meaning, "I heap up," and undoubtedly refers to the hoarding and thieving propensities of these Jays.

The Oregon Jay is from eleven to thirteen inches long,

with white forehead, and head and neck blackish. The rest of upper parts are brownish-gray, the back having white shaft streaks, and the tail sometimes slightly tipped with white; under parts white. The young are dull sooty-brown, darkest on head, and brownish below.

It is a resident of the high mountains from British Columbia south to Mendocino County, California. Like others of this genus they are social fellows, and not afraid of mankind whom they visit in hopes of securing something to eat.

Mrs. Bailey says that their notes are pleasantly varied. "One call was remarkably like the chirp of a Robin. Another of the commonest was a weak and rather complaining cry repeated several times. A sharp contrasting one was a pure clear whistle."

GENUS CORVUS: CROWS AND RAVENS.

Western Crow: *Corvus brachyrhynchus hesperis*.

Western Raven: *Corvus Corax sinuatus*.

SUBFAMILY—CARVINÆ: CROWS.

IN this genus we have the Crows and Ravens, birds so entirely different from any others considered and so well known by every one, that they will not be individually considered. They are all large black birds that walk, and the sexes are alike. The Ravens are from twenty-one to twenty-six inches long, and the Crows slightly smaller and less clumsy.

Grinnell says that the Western Raven is common resident locally throughout the State, on the most arid deserts and in the northern humid coast belt as well as in the interlying area. Now scarce or absent in the most thickly settled counties. Notably numerous on and around the islands of the Santa Barbara group.

The Western Crow is a common resident of the interior valleys west of the Sierran divide, and of the seacoast and adjacent valleys from Monterey County northward, including the San Francisco Bay region. Fairly common locally in the lowlands of the San Diegan district, south to Campo, breeding. Both Ravens and Crows are found farther up the western coast and as far north as Alaska.

They are by no means song birds, the Raven possessing a harsh *croak* and the Crow a *caw* that is about as pleasing. They are among the most omnivorous of birds,

and being of a very hardy nature, they are able to find a sufficient food-supply without migrating.

During the winter months they usually band together in large flocks and rove about more or less, visiting sea-shore, lakes or rivers in search of dead fish, or other food.

The Ravens nest in accessible cliffs and walls and forage in the valley below, and woe be to the bird whose nest and eggs they come across in their roving. The Crows, also, have anything but an enviable reputation in the matter of pilfering, their fondness for corn making them disliked by the farmers.

They are quick to imitate and have been taught to say words. In many ways they make admirable pets, although nothing that can be carried away is safe from them, their desire to hide things being fully indulged in in captivity, often to the discomfiture of the family.

One way of telling Crows and Ravens apart, besides the larger size of the latter, is the long, pointed feathers on the throat of the Raven, those of the Crow being short and rounded. In flight the Raven soars more, and the calls are different.

GENUS NUCIFRAGA—SUBGENUS
PICICORVUS: CLARKE'S
NUTCRACKER.

Clarke's Nutcracker: *Nucifraga columbiána*.

FAMILY—CROWS.

IN Northwestern America breeding from Alaska, and southwestern South Dakota (Black Hills), south to the high mountains of southern California, Arizona, and New Mexico; casual in western Nebraska and east to Missouri and Arkansas; accidental in Wisconsin, Iowa, and northern Lower California, is found a bird which, like

the Magpie, is so different in plumage from all others as to be easily recognized. It is twelve or thirteen inches long with ashy-gray body which becomes whiter on forehead and chin; bill cylindrical and nostrils concealed by tufts of feathers. The wings are black with white patches, and the tail has the middle feathers black, outer ones white. The young have the colors duller and the upper parts brownish-gray; under parts indistinctly barred.

These interesting birds, which are also known as Clarke's Crows, are restless and noisy, sometimes banding together in immense flocks and roving about for food. They are dwellers of the high mountains where they live upon the seeds of the conifers during the winter. They are also fond of berries, grasshoppers, beetles, butterflies, black crickets, and other insects, feeding their young on hulled pine seeds.

The nests are placed in evergreens from eight feet to forty from the ground and are made of twigs, on which pine needles, grasses, bark-strips, and other fibrous matter is well matted together.

J. Grinnell found Nutcrackers abundant, in 1904, on Mt. Pinos, Ventura County, California, occasionally being seen as low as 5,500 feet. In the San Bernardino Peak, at the head of the Santa Ana River during June and July they were seen as low as 6,000 feet.

GENUS CYANOCEPHALUS: PIÑON JAY.

*Piñon Jay: *Cyanocephalus cyanocephalus*.*

FAMILY—MAGPIES AND JAYS.

THE Piñon Jay is a distinctive member of the family found in the west. It breeds chiefly in the piñon and

juniper belt of mountains from central Washington, Idaho, and central Montana south to northern Lower California, Arizona, southern New Mexico, and western Texas, and from the Sierra-Cascade Range east to the eastern base of the Rocky Mountains; casual on the coast of California and in eastern Nebraska and Kansas.

It is a little smaller than the California Jay, being about eleven and one-half inches long, and, like that bird, has no crest. The general color is a grayish-blue, with head brighter, and throat streaked with white; bill cylindrical.

These birds are associated with the life of the sage and juniper-covered foothills, where grow, also, the piñon pines. Here, in juniper and piñon, they place their nest from five to fifteen feet from the ground, making it of twigs and sagebrush and lining it with finer rootlets and grasses. They are fond of nuts and berries found in this desert region as well as grain and grasshoppers. They do not seem to molest other birds, or their eggs.

Like others of their tribe, they are jovial fellows, banding together in large flocks in the fall and foraging about in a most erratic way, here one day, and gone the next. During the winter of 1914-15 a small band of them visited Los Angeles in the foothill region near the Arroyo Seco, their high-pitched, querulous *peeh, peeh, whee, whee*, being heard from the oak trees where they foraged, or as they wheeled in compact body through the air. One habit they have that has been likened to the Blackbirds and that is their way of feeding from the ground in large flocks, those in the rear flying over the others and settling in front of them to forage, thus giving all a fair chance.

Sometimes in the piñon groves they are found in company with the Clarke's Nutcrackers, but they never follow them in their vertical migration to the high altitudes. Because the pine nuts furnish the greater part of

their food, only in the juniper and yellow pine country of eastern Oregon are they found straying far beyond its range.

Willetts says of them in southern California that they are residents of the mountains, mostly on the desert side; that they are irregular visitants to the mesas and foothills along the base of the mountains, and that they undoubtedly breed in favorable localities in the coniferous forests, but that no eggs have been taken in southern California.

FAMILY—ICTERIDÆ: BLACKBIRDS,
ORIOLES, ETC.

THIS large and interesting family is made up mostly of dull-plumaged birds, having, however, one group which is unusually brilliant. With the exception of these latter birds—the Orioles—they are gregarious after the nesting season, banding together and going about in large flocks. In most of their habits, however, they differ greatly, living in all kinds of places; dry plains, wet marshes, and wooded areas.

Some members of the family, like the Meadowlark, are exceptionally fine singers, while others have harsh and unmusical voices.

Some have short, conical bills not unlike those of the Finches; while others have long, rather slender, and pointed bills. They are seed, grain, fruit, and insect eaters.

GENUS DOLICHONYX: BOBOLINK.

Bobolink: *Dolichonyx oryzivorus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

ONE of the best known, though not the most widely distributed, members of the family is the jovial, rollicking Bobolink. While many of these birds breed north of our country, others breed as far south as northeastern Nevada, Utah, northern Missouri, Illinois, Indiana, central Ohio, West Virginia, Pennsylvania, and New

Jersey; wintering south of the United States. Rare transients in California.

In his summer robe the male bird is distinctive enough to make identification easy. His under parts, wings, tail, foreback, and face, and crown are a lustrous black. The back of head and neck has a buff or creamy patch, some of the same color striping the foreback and wings; the lower back, rump, and tail coverts, as well as a large patch on the wing, are white; the bill is stout and Finch-like. The females' prevailing color is yellowish-brown, the under parts paler and plain except for streaks on flanks; the crown and upper parts are heavily streaked with brown. In the fall, after nesting duties are over, the male changes his gay attire for that of the female and becomes the Reedbird, or Ricebird, of the south. The transition period produces a peculiar bird; one neither male nor female. The breast is mottled with black, the white wing-patch remains, and a white nape. The young birds resemble the female but are buff and more olivaceous.

Chapman says: "In June our fields and meadows echo with the Bobolink's 'mad music' as, on quivering wing, he sings in ecstasy to his mate on her nest in the grasses below. What a wonderful song it is! An irrepressible outburst; a flood of melody from a heart overflowing with the joy of early summer." Mrs. Bailey relates in "Birds of Village and Field" a curious sight observed by herself. A singing Bobolink when in mid-air raised his wings over his back and held them there like set sails, and then threw up his head and throat as if to let the song bubble out. The flying birds often put down their wings and hold them stiff as they sail down to the ground.

They are gregarious birds that congregate in open fields and meadows and place their nests on the ground. If the field adjoins an orchard they are glad to use the trees for their concerts, but nodding grasses and weeds

do quite as well. It is, indeed, a wonderful sight to come upon a large flock of these birds flying over the field, singing in wild abandon, or attending to nestlings.

While the birds are much beloved in their northern home, in the south they are much disliked because of their destructiveness. About the last of April they reach the southeastern coast of the United States, just as the rice is sprouting. Settling in the fields they pull up and devour the sprouting kernels. Because of this damage to the crops they are killed by the hundreds. The males precede the females by a few days, coming in flocks of two or three hundreds and being in full song. Surely a wonderful sight, and sound. In the fall when young and old are journeying together, the plumage being very similar at this time, they also visit the rice fields, and are known as Rice, or Reed, birds.

Robert o' Lincoln has been heralded in song and story more than most birds. One of the recollections of school days is the poem in the reader which ran, Bobolink, Bobolink, *spink, spank, spink*, being prefaced by a picture of a bird swaying on a reed.

It is to be regretted that these birds are only transients in California, Grinnell giving four records of their appearance in the State. Perhaps, however, they may yet mend their ways and become more familiar.

GENUS MOLOTHRUS: COWBIRD.

Cowbird: *Molothrus ater ater*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

THE Cow Blackbird is found commonly throughout the United States as far west as the Rockies and in fewer numbers on the Pacific Coast, Nevada, and New Mexico. Dawson reports them as summer residents in

Washington, east of the Cascades, and rare or casual in the western part of the State. They are reported as wintering in southeastern California, and Willett gives several cases of the eggs and young of the Dwarf Cowbird (*M. a. obscurus*) having been found in the willow regions of the lowlands of Los Angeles County. However, the birds are rare in California, and we hope will remain so.

The male is about eight inches long with brown head, neck, and breast, the other parts being a glossy green-black. The female is a dull brownish-gray. On the Plains this bird was called Buffalo-bird, and now where large herds of cattle live they are found.

This is the bird about which little good is recorded. Most people despise him, or her, because the regular maternal duties of building a nest and rearing young like other birds are shirked by the Cowbirds.

They come north in March or April—the males preceding—and then, banded together in promiscuous flocks of both sexes, they forage throughout the country, especially where there are cattle. They are not at all afraid of these large animals and unconcernedly walk among them gleaning insects. They even fly onto their backs in search of parasites. It was these parasites on the buffaloes that attracted the birds and kept them about.

Economically, they are considered beneficial as they eat grasshoppers, weevils, leaf-hoppers, wasps, ants, flies, etc., as well as weed seeds. It seems, however, to be a case of giving the devil his dues for every bird is raised at the expense of some more useful species. The female Cowbird from April to June occasionally slips out from the flock and skulking through the trees and bushes, hunts up the unprotected nest of some smaller bird. Warblers, Vireos, Flycatchers, and Gnatcatchers are favorites, with the Warblers probably bearing the brunt of this shiftlessness. Here, in the absence of the rightful

owners, the bird deposits her eggs, then again joins some roving band. Usually only two eggs are laid, but three or even four may be.

The small birds upon whom the Cowbird has imposed, sometimes desert their nest; sometimes build a false bottom over the big egg and again lay their own. Often, however, they submit to the ways of Nature, and raise the young Cowbird which hatches before their own and being so much larger and stronger gets most of the food, so that the rightful heirs are starved, or smothered, or pitched out of the nest by the usurpers, and the foster-parents raise the Cowbird. However, as soon as he is weaned, the ungrateful wretch joins the bands of his own kind and again we see illustrated the old adage that "Blood is thicker than water." Is it any wonder that these birds are not favorites?

These Cowbirds, plebeian in name and ways, are not musicians. The common call is a *chuck* note while the *song* is a long, thin, high-pitched whistle—distressing to hear.

GENUS MOLOTHRUS: DWARF COWBIRD.

Dwarf Cowbird: *Molothrus ater obscurus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

IN southeastern California and southern Nevada east to southern Texas and south into Mexico is found the Dwarf Cowbird which resembles its eastern cousin.

Though these birds have not, as yet, become very common in Los Angeles and vicinity, one summer it was my privilege to come across two young birds, both being fed by Song Sparrows.

On June 22nd, 1916, I was giving a bird talk at a

picnic in South Park, Los Angeles. As I told about our common birds, many of them hopped about near the table and picked up crumbs unmindful of our presence, much to the delight of my listeners. Presently some one exclaimed: "Look at that small bird feeding that large one!" and, peering beneath a bench, I was amazed to see a Song Sparrow feeding a young Cowbird twice her size. The two were about all the afternoon. On July 5th of the same year I found a Song Sparrow mothering a big Cowbird in a neighbor's yard.

GENUS XANTHOCEPHALUS: YELLOW-HEADED BLACKBIRD.

Yellow-Headed Blackbird: *Xanthocephalus xanthocephalus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

THE showiest of the Blackbirds of the United States is found in the great plains of the middle west, extending east to Indiana, north through Minnesota, west to the valleys of the Pacific, and is a rare visitor in the Atlantic States.

It is a summer resident, only, in most of its breeding range, but winters in southern California and throughout the extreme southern portions of the United States. Often a few of these birds are seen in flocks of the Red-wings.

Thomas S. Roberts, in Audubon Leaflet 57, has given an excellent account of the habits of these birds, from which I shall take extracts.

Mr. Roberts says that there is one invariable condition necessary to induce the Yellow-head to establish a summer residence, and that is an abundant and permanent water-supply, and associated with this must be

just the kind of vegetation that is suited to its rather peculiar tastes. Preference is given usually to a swamp or slough that is very wet and has more or less open water; never meadows or marshes that are simply damp and subject to drying out. The tule beds of the valleys of the west, the quill-reed brakes of the north, and the flag swamps of the south are alike acceptable. Wherever the Yellow-head breeds it congregates in colonies, and these assemblages are often of vast proportions.

The male is about ten inches long with black plumage save for a large white patch on the wings and the brilliant yellow head, neck, and breast. A black wedge runs from the bill through the eyes. The bill is shorter and heavier than that of most Blackbirds.

The female is a soft brown with a yellow line over eye and dull yellow throat and chest; breast mixed with white. In the winter time the yellow head of the male is concealed by brownish tips of feathers.

"The female builds the nest and incubates the eggs without any assistance from the male.

"The male assists in the care of the young, but only to a limited extent and chiefly after they leave the nest.

"The body of the nest is constructed of wet material collected from the water nearby. This is woven about the stems of the reeds, two or three feet above the water, and its drying and contracting fixes the nest securely in position.

"The lining consists of pieces of broad, dry reed-leaves, the rim of the nest being often finished off with the fine branches of the plume-like fruiting tops of the reeds, forming a sort of canopy over the somewhat constricted entrance. The typical finished nest is a firm, inverted, cone-shaped basket-like affair, suspended among the rigid stems of last year's reeds, only exceptionally among new growth. The height is usually eight to ten inches, rarely only four or as much as twelve inches.

"A skillful, industrious bird will build one of these large, beautifully woven and lined nests, all complete, in two to four days.

"The eggs in a set are three to five, usually four. They are laid one each day, the first egg one to five days after the completion of the nest, depending upon the time it takes the nest to dry."

The usual period of incubation is ten days and the young remain in the nest about twelve days before they scramble into the swaying reed-tops.

"The song of the male Yellow-head, if song it may be called, is a most remarkable, unmusical and unbirdlike effort. At a time of the year when most other birds are singing finished nuptial songs, however humble, this fine fellow, perched aloft on a cluster of swaying reed-stems, is straining every nerve in an attempt that results, after a few harsh preliminary, but fairly promising notes, in a seeming painful choking spell, that terminates in a long-drawn rasping squeal that is nothing short of harrowing. It has always seemed as though some day a Yellow-head would be found who could sing the song that they are all trying so hard to render, but thus far not a single note of the dreadful discord has been improved upon, and it always ends in the same disappointing failure. The rasping, scraping sounds are accompanied by a most intense bodily effort, as is evidenced by the widely spread tail, swollen throat, upturned head and twisted neck. Even the ordinary call-note is a hoarse rattling croak that suggests a chronic sore throat. The voice of the female is less harsh, and I have never heard it utter the long squeal of the male."

GENUS AGELAIUS: RED-WINGED
BLACKBIRD.

Red-Winged Blackbird: *Agelaius phœniceus phœniceus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

ONE of the most familiar birds of the eastern United States is the Red-winged Blackbird which ranges east of the Great Plains, except the Gulf States and Florida, wintering mainly south of Ohio and the Delaware valleys.

Banded together in large flocks they spend their winters in the south, coming north in March, where they build their nests in marshes, swamps, and meadows.

The males are about nine and one-half inches long and are a brilliant black, except for bright red shoulder patches which are edged with buffy-white, making them showy birds. The females are nearly two inches shorter and so different that one would never mistrust that they belonged with the black males. The crown is brown and cream striped; the upper parts are brown, streaked with light, and the breast whitish streaked with brown. Altogether a most streaked bird. The young resemble the female. In the fall when nesting duties are over, the males gather in one flock, and the females and young in another, so that one unfamiliar with this habit might be puzzled to know what they were.

Like other Blackbirds they are gregarious and nest in colonies. Reeds and cat-tails are favorite sites, but bushes and low trees are also used when in marshy localities.

The nest is beautifully made of grasses, or like material, and attached to the upright reeds a few feet above the water. The inside is lined with finer fibers. In

structure and material used these nests are similar to those made by the Yellowthroats in like localities, although they are, of course, much larger.

While the females brood the males hang around in the nearby willows, or reeds if there be no trees, and keep up their flute-like *kon-ker-éé*, *o-ha-leé* song which Forbush so aptly says "carries a suggestion of boggy ooze." The common call is a single *chuck*, while another note is a shrill sound like the filing of a saw. This varies with individuals, some being guttural, and others remarkably clear.

These birds are known to eat weevils, grasshoppers, caterpillars (among them the injurious army worm), ants, wasps, bugs, flies, dragonflies, and spiders, but they also do much damage to grain in the summer time in the Mississippi Valley, where they go about in large flocks; and to the rice fields of the south in the winter time, where they are banded together in even larger companies.

GENUS AGELAIUS: WESTERN RED-WINGS.

Sonora: Agelaius phœniceus sonoriensis.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

THE common bird of the east is not found west of the Rockies, but in its place are several similar species and subspecies. Just why these birds are not all placed together, only the scientist knows. To the ordinary mortal they look alike, and vary little from the eastern form.

The Sonora Red-wing lives in southern California (Lower Colorado Valley) and southern Arizona, and south over the coastal plain of Sonora to Tepic.

It breeds in the tule marshes, in grain fields, and mustard patches, even placing its nest on the ground.

The San Diego Red-wing (*A. p. neutralis*), breeds from eastern British Columbia south to northern Lower California, New Mexico, and western Texas.

The Northwestern Red-wing (*A. p. caurinus*) from British Columbia south to Mendocino County, California. This bird is similar to the San Diego but the female is much darker, being heavily streaked with black below. Dawson gives one song as *whoo-kuswee-ung*, as well as *Conquerée*.

The Thick-billed Red-wing breeds from above the United States south to northeastern Colorado and northern Texas, wintering principally in the southern part of its breeding range, but wandering irregularly further eastward.

This bird resembles the eastern one but is the largest of the genus, and the bill is shorter and proportionately thicker. Bulletin No. 107 reports these birds as doing much good work in the Salt Lake Valley by eating the weevils that are so destructive to alfalfa.

GENUS AGELAIUS: BI-COLORED RED-WINGS.

Bi-Colored Red-Wing: *Agelaius gubernator californicus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

As if these various subspecies were not enough to confuse the most painstaking bird student, there are two other varieties found in the west. One is found in the valleys of California west of the Sierra Nevada, straggling south and east to San Diego and Owens Lake, California; and Casa Grande, western Arizona. Recorded, also, as breeding at Cape Disappointment, Washington.

It differs from the others in that it lacks the buffy strip next to red patch.

The Tricolor Red-wing (*A. gubernator*) occupies the Pacific Coast from valleys of northwestern Oregon south through California (west of Sierra Nevada), to northern Lower California. It has dark red epaulettes edged with white. The nests are more loosely constructed and shallower.

GENUS STURNELLA: MEADOWLARK.

Meadowlark: *Sturnella magna magna*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

No member of this large family is better known or more beloved than that dweller of pastures and open stretches, the Meadowlark.

It is about ten and one-half, or eleven inches, in length with long pointed bill, short tail, and rather stout body. Its general upper plumage is brown, with many dark-streaked, pale-edged feathers; light stripes on the middle of the crown and over the eye, dark streak back of the eye, and a yellow lore patch. The outer feathers of the short tail are white, which show conspicuously in flight and help identify the bird as far as seen. This flight, also, is peculiar, being an alternation of slow sailing and flapping. But the beautiful distinctive thing about the male is the bright yellow under parts which are accentuated by a deep black crescent across the breast. The female is paler with yellow much duller and less conspicuous. The adults and immature in winter time have the prevailing color rufous-brown, the breast crescent veiled by buffy, and the yellow under parts duller.

These birds are found breeding as far south as northern Texas, Missouri, and North Carolina, and west to

western Iowa, eastern Kansas, and northwestern Texas; wintering regularly from the Potomac and Ohio valleys south to the Gulf States, and north locally to the Great Lakes and southern Maine.

Being dwellers of the treeless country, they build their nests on the ground in thick grass or weeds which form a canopy over the nest and completely hide it from above. They have a stealthy way of going to and from the nest, never flying down directly beside it, but instead lighting some distance away and stealing up to it through the thick grass. Uncultivated fields are favorite nesting places.

All ground-nesting birds have, beside their human enemies, snakes and various small animals to contend with and, consequently, the young usually develop rapidly and leave the nest while yet very young. In the case of the Meadowlarks, the nestlings scatter from the home when four or five days old, thus lessening the possibility of the whole brood being annihilated.

The song of the Meadowlark is a clear, plaintive whistle of unusual sweetness. Mrs. Bailey says that the Bobolink and the Meadowlark are two songsters of our eastern meadows whose song is quite different. "One can scarcely listen to them in the same mood. Robert o' Lincoln's song is of June gladness, of strong sunshine making the daisies whiter and deepening the buttercup's gold; while the Meadowlark's, as he springs from the dew-laden grass and sails up into the blue sky, is so fresh and pure it seems to come on the wings of the morning, and gives the deeper beauty of that day in June when Heaven would try the earth if it be in tune. The Bobolink's mood is one of care-free happiness; the Meadowlark's suggests the fervent joy that is akin to pain."

A bird called the Southern Meadowlark (*S. m. argutula*) is found from southern Illinois, southwestern

Indiana, and North Carolina south to the coast of southeastern Texas, Louisiana, and Florida. It is smaller and darker than *magna*.

GENUS STURMELLA: WESTERN MEADOWLARK.

Western Meadowlark: *Sturmella neglecta*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

THE Western Meadowlark resembles its eastern cousin in many ways, the chief difference in plumage being the yellow patches on sides of the throat, more pronounced tail-bars, and darker upper parts. This bird breeds along the western coast to southern California, northern Mexico, and central Texas; wintering from Southern British Columbia and Iowa south to Lower California; east casually to Wisconsin, southern Michigan, and northern Illinois.

The chief difference in the eastern and western birds is the song, in which the westerner excels. Chapman says of it: "The call note of *neglecta* is a *chuck, chuck* followed by a wooden rolling *b-r-r-r-r*, analogous to but very unlike the *dzit* or *yert* and metallic twitter of *magna*. The song of *magna* is a clean-cut piping without grace notes; that of *neglecta* is of mellow bubbling flute-notes. The flight-songs of the two birds are much alike, but, in my experience, *neglecta* sings much more frequently on the wing, and, in the height of the mating season, sings as often in the air as from the perch."

The refrain is longer than that of the eastern bird, as well as richer and sweeter, louder and more varied. It is a whistle which human beings have imitated but not set down satisfactorily in words. Surely, as it rings out on the clear air, from open foothill or barren field, it is

the most inspiring of songs. It fills at least *one* listener with patriotism for the State, and with the pure joy of living. Pessimism and gloom must vanish before it and only joy and good cheer reign.

Olive Thorne Miller says of the Colorado songster: "The whole breadth and grandeur of the great West is in this song, its freedom, its wildness, the height of its mountains, the sweep of its rivers, the beauty of its flowers—all in the wonderful performance."

The bird does not realize how wonderful is this performance for he sings from the ground, a fence post, telephone pole, or on the wing, as fancy urges.

A single note one often hears is a shrill whistle, and another which both birds give is a long trill. When startled a *chuck*, *chuck* note is used.

Government Bulletins tell us that Meadowlarks are, economically, of great value, although they sometimes eat grain. They are especially fond of the boll weevil, that foe of the cotton grower, as well as the alfalfa weevil. Twenty-six per cent of the diet is beetles, half of which are predacious ground beetles. Caterpillars form eleven per cent of the food and are eaten in every month in the year. Among these are many cutworms and the well-known army worm. Grasshoppers are favorite food, being eaten in every month and almost every day. The vegetable food consists of grain and weed seeds.

In Bulletin No. 236, sent out by the agricultural station of the California State University, Dr. Harold C. Bryant, who made the investigation, reports that in certain sections of the State the birds do harm to sprouting grain by following the drill-row, boring down beside the sprout, and pulling out the kernel. Oats appear to be preferred although barley and wheat are taken. Field corn and sorghum are not damaged.

In some fields the birds had followed the drill-row for



YOUNG MAGPIES.



1—AUDUBON WARBLER IN WINTER PLUMAGE. 2—YOUNG COWBIRD.

a distance of from four to six feet, pulling every sprout. In localities where birds were not abundant, no harm was done.

Dr. Bryant found that the damage done by Meadowlarks was exaggerated since the birds can pull the sprouting grain only when it first appears above the ground, as after the second and third blade appears it is too well rooted, and the kernel is no longer necessary to the life of the plant. Only grain which is within one and one-half inches of the surface of the ground is obtainable and because of the difficulty of obtaining the seed, and the short time it is essential to the life of the plant, makes the period of injury to fields seldom extend over two weeks. Then, too, the most notable thing about this investigation is the fact that in places where the birds had pulled the grain little damage has been noted at harvest time. Dr. Bryant thinks that in some cases the crop may have been benefited by this thinning done by the birds.

The complaint of injury to melons and grapes by the birds has, also, been grossly exaggerated. Investigation has proved that fully sixty per cent of the birds' food is animal matter, including ground beetles, grasshoppers, crickets, cutworms, caterpillars, wireworms, stink-bugs, and ants; and forty per cent is vegetable matter such as grain and weed seed. The stomach contents of one bird included thirteen cutworms, twenty-six chick-beetles, and ten small ground beetles.

It is to be hoped that this investigation will forever settle the economic value of these birds so that it will not be necessary for the State Audubon Society to again fight for their protection, as they have had to do for so many years.

Dr. Bryant says: "Few people have any realization of the great quantities of insects consumed by birds. For instance, if we consider that there is an average of one

meadowlark to every four acres of available land for cultivation (11,000,000 acres) in the Sacramento and San Joaquin valleys, and that each pair of birds raises an average of four young, each one of which averages one ounce in weight while in the nest and consumes its own weight of food each day, it takes 193 tons of insect food each day to feed the young birds in the great valleys alone. The number of birds probably exceed the number suggested. The increased consumption of insect food due to nestling birds comes at a time when insects are most numerous, and so is instrumental in helping to prevent an undue increase of insects."

SUBGENUS PENDULINUS: ARIZONA HOODED ORIOLE.

Arizona Hooded Oriole: *Icterus cucullatus nelsoni*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

ARIZONA Hooded Oriole is a common summer resident in southwestern California, southern Arizona, and southwestern New Mexico, south; being very abundant in the vicinity of Los Angeles, California.

To my mind this is the handsomest of the Orioles, being long and slender and a beautiful study in orange and black. Before I ever saw this bird I looked for a black-hooded bird, but the hood is orange, as is the rest of the plumage, save for a deep rounded patch of black on throat, black tail, foreback, and wings which have two white bars. The length is nearly eight inches. The female is dull, being plain yellow below and olive-green above; wings brownish with two white bars. The first year young resemble the females; the second year males are still like the females save for a deep black throat patch. The third season, or when the bird is two years

old, he has the bright plumage. Ornithologists are divided as to whether this different plumage of the second and third year is a set rule, or whether it is simply individual variation.

The Oriole which most resembles this one in the east is the Orchard. It is quite similar in shape and the females are much alike as well as the second year males.

The Hooded Oriole is the commonest one in California, usually reaching Los Angeles some time in March, sometimes earlier, and staying into September. Usually the males precede the females by a few days.

In the matter of nest-building few American birds excel the Orioles. That of the Hooded is one of the most interesting. A favorite nesting-site is the under parts of a palm leaf, but eucalyptus and other trees are used where there are no palms. The nest is a cup-shaped semipensile affair made of fibers and grasses. When in the neighborhood of palms, their fibers are used entirely, making a light nest that just matches its overhanging cover—the big leaf. Often the nest is not more than eight feet from the ground, although it may be thirty, or more.

The female does the building and it is amusing to see her light on one of the leaves and pull at a loose fiber until she has stripped it down and broken it off. Just how she succeeds in getting this limpy fiber through the stiff palm leaf and making it stay until, with its associates it has formed the dainty basket, is still a mystery. It seems not to be the habit of the birds to go on top of the leaf and pull the fiber through, but rather to work from below, and with the strong, pointed bill to make a hole, through which the material is pushed. It is fastened in four places, usually. One might pass a tree where hangs one of these nests without noticing it, so close does it hang to the leaf, were it not for the peculiar habit which the bird has of leaving a group of long fibers

which hang and float in the breeze, proclaiming to every passer-by its whereabouts. Sometimes these decorations are two feet long. Nothing but these palm fibers are used in these nests. I have known the birds to use them for the second brood, but usually a new one is constructed.

I believe it is the habit of these birds to lay the eggs successive days and brood only when the clutch is complete. The female does all the brooding, the male staying about and singing his low, warbling song, driving intruders away, scolding and chattering.

In a nest which I watched one April which was hung about twenty feet from the ground, the female left the nest six times in an hour and twenty-seven minutes; staying away fourteen minutes the longest time, and three the shortest. The longest interval of brooding was eighteen minutes; the shortest two.

On May 4th there were newly-hatched young in the nest and the birds fed eight times in one hour; the male five and the female three. It is of interest to the bird student to know that at this time the adults were not feeding by regurgitation, but were carrying visible food to the young.

When the nestlings were eight days old wobbly heads showed above the rim and they were noisy, calling in squeaky voices for food.

On May 19th, when the young were fourteen days old, they flew from the nest into nearby trees and for days were about with the male. This female raised another brood in the same nest and they were able to fly on July 13th.

The song of this Oriole is usually very low, being a veritable whisper song, which is broken into by a husky chatter, and is not particularly pleasing save for the enthusiasm the singer puts into it. One summer I was surprised to hear a dull-plumaged male singing a loud,

rather musical, song. He was in my garden for some days and was evidently trying to impress a somber female. A common call note is a rather musical *peet, peet*, which strongly reminds one that this gorgeous creature belongs to the same family as the Blackbird, a fact we surely might forget were it not for this reminder.

The eastern bird that most nearly resembles the Hooded is the Orchard Oriole (*Icterus spurius*). It would hardly seem necessary to mention this bird in a western book but this last year (1920) these birds have been reported as nesting near Whittier, and Elizabeth Lake, California. I have not seen them myself but hope the report is true and in this year of wonderful changes in the bird world, it seems not unlikely.

The male Orchard is slightly shorter than the Hooded and quite different in coloring. The male has black head, neck, foreback, tail and wings, the latter having brown and white markings. The rest of body is a bright chestnut, or as I remember it, brick-red in hue. The female resembles that of the western bird, being yellow below and olive above, with darker wings that have two light bars. The second year male, also, resembles his western cousin, having the deep round throat patch of black.

GENUS ICTERUS: BULLOCK'S ORIOLE.

Bullock's Oriole: Icterus bullocki.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

THIS gorgeous bird is the western representative of the Baltimore Oriole which is not found in this State. In shape and size the birds are similar but the western bird has more of the orange color. Instead of the black

head and neck, Bullock has a patch of black on the top of the head and on the throat and lores, while the forehead, sides of head, breast, and lower back are a deep orange, the outer tail feathers being yellow. The upper parts of back, center tail feathers and wings are black, the latter having white patches. The female has lemon yellow under parts, the throat having more or less black; the upper parts are olivaceous, becoming browner and somewhat streaked on the back; the rump and tail are yellowish, and wings with two wing bars. The first year birds resemble the female and the second year males are still like her but have the black throat patch and lores. It happens sometimes, therefore, that the nesting male may be one of these immature birds, which the bird student might fail to identify, if unfamiliar with these facts.

In size and coloring the female resembles the Western Tanager but the dark slender bill of the Oriole will differentiate it from the heavy-billed Tanager.

This is the only Oriole which ranges the entire length of the Pacific Coast. It also extends to South Dakota, central Nebraska, and western Kansas, wintering south of the United States, and being accidental in New York and Maine.

The males usually precede the females, appearing in southern California early in March, sometimes earlier. Here they are not so abundant as the Arizona Hooded, nor do they so often nest about the yards, seeming to prefer the sycamore, eucalyptus, and willows along streams. In Washington it uses the willows, cottonwoods, and asps, as well as the cultivated locusts, maples, and Lombardy poplars.

In the matter of nest-building it resembles its eastern cousin. A nest described by Dawson was composed entirely of vegetable fibers, the frayed inner bark of dead willows being chiefly in evidence, while plant downs

of willow, poplar, and clematis are felted into the interstices of the lower portion. This pouch is lashed at the rim with a hundred tiny cables to the sustaining twigs, and hangs to a depth of six inches, with a mean diameter of nearly three. Because of the delicate materials and fine workmanship, this nest weighed less than half an ounce. Another nest described was more bulky, having a maximum depth of nine inches outside, a mean depth of six and one-half inches inside, and a diameter of five inches.

Still another and more unusual nest of these birds was procured by Mrs. E. J. Saunders, of Whittier, it being blown down soon after completion. This nest was hung in a poplar tree about fifteen feet from the ground and was completely roofed, or hooded, over with the opening on one side near the top, a most wonderful piece of workmanship. It reminds me of a similar nest I once saw which was built by a Baltimore Oriole, which is the eastern representative and resembles in many ways the Bullock's. It is interesting to note that these individuals of two so widely separated species should build similar nests that are so different from the ones ordinarily built by their kind.

The song is loud and clear, ringing forth in clarion notes and ending rather abruptly. It resembles Baltimore's song but is not so often heard, since the bird is more of a recluse.

Henshaw, who has made a thorough investigation of its food habits, says the diet is largely made up of insects that infest orchards and gardens. Beetles amount to 35 per cent of its food, and nearly all are harmful. Many of these are weevils, some of which live upon acorns and other nuts. Ants and wasps amount to 15 per cent of the diet. The black olive scale was found in 45 of the 162 stomachs examined. Caterpillars, with a few moths and pupæ, are the largest item of food and amount to

over 41 per cent. Among these were codling moth larvæ. The vegetable food (19 per cent) is practically all fruit and in cherry season consists largely of that fruit. Eating small fruit is the bird's worst trait, but it will do harm in this way only when very numerous.

GENUS EUPHAGUS: BREWER BLACK- BIRD.

Brewer Blackbird: *Euphagus cyanocéphalus*.

FAMILY—BLACKBIRDS, ORIOLES, ETC.

WHILE the east has several Blackbirds, or Grackles, the Brewer Blackbird is the only one on the western coast of this country. It breeds north of the United States and as far south as northern Lower California, New Mexico, and western Texas, and from the Pacific to northwestern Minnesota, western Nebraska, and Kansas; wintering from southern British Columbia and Kansas, south; in migration it is casual in Wisconsin, Illinois, Missouri, Louisiana, and South Carolina.

In size, shape, and square tail it resembles its eastern cousin, being far more graceful than the Bronzed Grackle. The bill is not so heavy and Crow-like and the tail never turns up boat-like.

The male Brewer is a beautiful glossy green black, with head and upper parts, changing to purple and blue tints. His eye is a light yellow (and sometimes almost white), and his carriage most stately. The females are a rusty black, or soft brown, with glossy blue and green shadings on head, neck, and wings. The brown eye has a most pleasing expression.

In the greater part of their range they are residents. They are extremely friendly birds, seeming fond of the haunts of man. In the winter months they band together in rather small flocks and forage about the country.

They nest in colonies and in my own neighborhood (Los Angeles) usually use the pine and cypress trees, although I have known them to select pepper or live oaks. In these trees the nest is placed from ten to thirty feet from the ground. In other localities they have been known to use willow thickets, and low sage bushes prove favorite sites in the more treeless portions of their range. They have been reported, also, as building on the ground at the base of bushes, as well as in cavities.

The nest is bulky with a foundation of twigs, straws, and coarse material, welded together with mud and lined with fine rootlets, or hair. From four to six eggs are laid.

The Brewer Blackbirds, while not quarrelsome among themselves, are extremely unfriendly toward people, dogs, or cats that pass near their nests. Very often they choose the shade trees along the street and when any one passes beneath, they fly down and pick them on the head, dart about their ears, keeping up their harsh calls as they do so, and flirting their long tails in indignation. Dogs, as well as humans, are glad to escape this tirade.

In my own yard food is always out for the birds. Throughout the summer months these Blackbirds make nuisances of themselves by their continuous coming to the table for bread crumbs for their nesting young. They not only eat ravenously and carry away big pieces, but they drive all other birds away. When the young are able to fly they are brought to the table, fed there and taught to help themselves.

The birds raise more than one brood and I have seen the parents feeding two large young, together with three smaller ones, making a noisy, rusty company—save for the resplendent male.

They are fond of water and come daily to my bird pool for a bath. And, too, they have a way of lolling on my bird table, or lawn, and with all their beautiful iridescent feathers puffed out, take a sun bath.

These birds, more than any others, I believe, are in-

clined to albinism. It is no unusual thing to see in a flock of birds, one with white feathers on head, back, breast, or wings.

The common call is a harsh *check*, which is given when they fly, as well as at other times. One single note is a high-pitched, though not unmusical *spéé-e*, the only reminder that these birds belong to the same family as the Orioles. *See-eé* or *see-eép* is given as they forage about in the yard, and *tut, tut, tut*, is another friendly note used by the flock. The nearest approach to a song is a *Chuck-a-reé-e*, querulous notes which are given on the ground, or higher resting place. During the mating season it is amusing to see the handsome male with his tail fully spread, his feathers on end and head thrown stiffly back until his bill points upward, strutting before an admiring female and giving his *Chuck-a-reé-e* song.

The changing of the young males from the dull plumage of the female to the glossy coat of the males takes place in the fall, and during the transition they present a curious, patch-work appearance; and a *crazy-quilt* patch-work at that. The glossy feathers crop out, here-and-there, making the bird look very ragged and comical. But he is a happy-go-lucky fellow and cares not so that food is forthcoming.

Some complaint is made that these birds do damage to sprouting grain, and grain as it is being sowed. But they repay any damage done by the noxious insects eaten. Wherever a field is being plowed, there you will find the birds, and no cutworm escapes them. A rancher who was starting an orange nursery, told me his experience with these birds. In preparing the soil for the trees he drew in enriching which proved to be full of worms. The trees were set in rows so that he could plow between them. Whenever he did this, the birds left the nearby eucalyptus trees and swarmed behind the plow. This was their regular program until they had eaten every worm.



Copyright by Brown Brothers.
WESTERN MEADOWLARK.



1—NEST OF REDWING BLACKBIRD. 2—YOUNG BREWER BLACKBIRD.

Another man testified that these birds came to his cornfield and picked the worms out of the top of the ears. Every one living in California knows how hard it is to get "wormless" sweet-corn and will, I am sure, appreciate and approve the work done by the birds. Most people, however, seeing the birds there, would have instantly mistrusted that they were eating the corn, so prone are they to condemn our feathered friends on circumstantial evidence.

Dr. Harold C. Bryant, who has made a thorough investigation of the economic value of California birds, reports these Blackbirds as doing much to check insect outbreaks at various times.

In the 1912 outbreak of grasshoppers in the northern part of the State, the birds of various species left their homes and went to the infested spots, even changing their food-habits and eating grasshoppers in amazing quantities. Among the most useful were the Brewer Blackbirds, Meadowlarks, Kingbirds, and Orioles. At every outbreak of the army worms these birds do yeoman work eating them. In the nymphalid butterfly outbreak of 1911, Dr. Bryant found that these Blackbirds were the most efficient destroyers of the insects, both on account of their numbers and their food-habits, eating 95 per cent of all the butterflies eaten by birds. It was found, also, that 83 per cent of their food was animal.

In a recent investigation of the alfalfa weevil in Utah, carried on by the Biological Survey, and told in Bulletin 197 by E. B. Kalmbach, assistant biologist, the Brewer Blackbirds are reported among the most efficient enemies of the weevils. It was found that one of them had eaten the largest number of these weevils recorded for any bird, a total of 374 larvæ, 65 pupæ, and 3 adults, which comprised 96 per cent of the food.

And yet people often ask what good the Blackbirds do!

FAMILY—FRINGILLIDÆ: SPARROWS,
FINCHES, ETC.

THE birds found in this family compose the largest and most widely distributed group, there being some twelve hundred species and subspecies, which are found in all parts of the world except Australia.

According to the Check List of North American Birds issued by the American Ornithologists' Union, there are over two hundred species and subspecies found in America. There is a great variety in this family of birds, and in consequence some member of the Sparrow, Finch, Grosbeak, or Bunting group, is found wherever we go, be it mountain, sea shore, desert, or fertile valley. In woods, open fields, marshes, swamps, city parks, or our own door yards, one, or several, members of the family may always be seen.

While varying in size and coloring, one characteristic they all have and that is the similarity of the bills. These birds are essentially seed-eaters and that they may be able to crack the seeds they are given short, stout, conical bills. Some of our Goldfinches have been confused with similarly colored warblers, but one glance at the stout bill of the Goldfinch and the long slender one of the Warbler, will easily settle the question.

The birds known as Sparrows are mostly dwellers of the ground and are dull of color to blend with their chosen haunts, while the Grosbeaks and Finches live mostly in the trees and are more gayly attired.

Many members of the family are choice singers, the domesticated canary belonging to this group. They are slow and deliberate in movements, as compared with the

Warblers, but because of the large number of species, their dull plumage, and the similarity in markings, the Sparrows are as tantalizing to differentiate as are the Warblers.

Economically, this family of birds are among our most beneficial. Although they are seed-eaters, they live largely upon insect life during the spring and summer, rearing their young on such food. When fall comes, and the seeds are ripe they turn their attention to gathering them, often banding together in large flocks and in many cases staying all winter. Care must be taken not to confuse our native Sparrows with that interloper, and pest, the English Sparrow, since our birds are, with few exceptions, beneficial and attractive.

Dr. Sylvester D. Judd, in "The Relation of Sparrows to Agriculture," Bulletin No. 15, Biological Survey, has made a comprehensive study of these birds.

While insects seldom form more than one-third of the food of the adult Sparrows during the year, the nestlings are almost entirely insectivorous. Since the birds raise two or three broods at the time the crops are growing, they do the greatest good as insect-pest destroyers by cramming down the throats of their ravenous young, countless numbers of caterpillars, grasshoppers, Rocky Mountain locusts and others.

But the greatest service done for man by these birds is in the destruction of noxious weed-seeds during the fall, winter, and spring months.

Seven hundred seeds of pigeon grass were found in the stomach of a Tree Sparrow; while one thousand seeds of pigweed had been taken at one meal by a Snowflake. Forbush tells of putting out Japanese millet one hard winter and having thirty Sparrows that came to his window for this food. A careful watch revealed that these birds were eating great quantities of the seed. A Fox Sparrow ate 103 seeds in two minutes and forty-

seven seconds; a Junco ate a like amount, while a Song Sparrow ate 34 seeds in one minute and ten seconds. Another of these birds ate 154 seeds in three minutes and forty-five seconds, and all the others ate similar amounts. Forbush estimates that thirty seeds a minute was below the average for these birds, and at that rate for even a single hour a day it would have eaten 1,800 seeds each day, or 12,600 a week. As many days, when the ground was covered with the snow, some of the birds spent several hours at the window-shelf, it is evident that this estimate of the good they may do by seed-eating is a low one.

Prof. Beal believes that the Tree Sparrows in the State of Iowa eat eight hundred and seventy-five tons of weed seed in a winter, which Forbush thinks is a low estimate. Surely these Sparrows are worth protecting.

Because of the great number of species of these birds, and in many cases the great similarity, and too, because Chapman, and others, have written so comprehensively about the eastern birds, I shall only take up for consideration the most common and distinctive ones of the various genera.

GENUS HESPERIPHONA: EVENING GROSBEAK.

Evening Grosbeak: *Hesperiphona vespertina vespertina*.

FAMILY—FINCHES, SPARROWS, ETC.

AMONG the largest and showiest members of this large family are the Grosbeaks—so named because of their *great bills*. Though all Sparrows, Finches, etc., have heavy bills, that of the Grosbeak is enough larger than any of the others to make it easy of identification, if one

but notices. It is probably this big bill which gives the bird a heavy, clumsy look. In some of them, also, the head is flatter, seeming almost to be a continuation of the beak.

The Evening Grosbeak is about eight inches long and plump of body. His forehead and line, over eye, rump, and under tail coverts are yellow; the crown, wings and tail are black, the wings have a large patch of white and smaller one of yellow near the body (scapulars); upper parts olive-brown; under parts greenish-yellow, with under wing coverts a brighter yellow; tail deeply notched and bill greenish-yellow; the prevailing color of the female is yellowish-brown, lighter underneath, yellowish on rump; throat bordered by dusky; wings and tail black with white markings. The young resemble the female.

These handsome birds are dwellers of the far north, only coming down into this country during the winter months, when in small flocks (sometimes large ones) they invade the northern Mississippi Valley, and wander to the North Atlantic States. They are wonderfully tame birds, seeming to know no fear of mankind. They are very fond of seeds and buds of trees; elder, maple, and box elder being favorites. Chapman says that the song is given as a wandering, jerky warble, beginning low, suddenly increasing in power, and as suddenly ceasing, as though the singer were out of breath. The call note has been given as a shrill *cheepy-teet*, as a frog-like *peep*.

GENUS HESPERIPHONA: WESTERN
EVENING GROSBEEK.

Western Evening Grosbeak: *Hesperiphona vespertina montana*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the western United States, breeding from northwestern Montana to the Sierra of central California, and east to the Rocky Mountains of Colorado and New Mexico, wintering irregularly west of the Plains, is found a similar bird which is known as the Western Evening Grosbeak.

While these birds are rare in Los Angeles, being occasionally seen in the fall in the nearby mountains and sometimes straying into the valleys, farther north small flocks of them spend the winter in the lowlands, even going into large cities and being very tame. They are very fond of the winged-seeds of the maple, which they crack and feast upon at the very feet of the passers-by.

Mrs. Bailey tells of watching one of these Grosbeaks in northern California which was most conspicuous as it flew in the open, but was obliterated when it lighted upon a dead stub whose branches were touched with yellow lichen. The peculiar greenish yellow of the bird toned in perfectly with the similar shade of the lichen. "The breeding range of the Grosbeak is largely coincident with the range of the lichen, the lichen being a striking feature of the forests of the Sierra Nevada, Cascades, and the northern Rockies, so that the unusual coloration of the bird may be of marked significance."

Dawson says that these birds are most abundant in Washington in winter and early spring when they flock closely and visit city parks or wooded lawns. He gives three sorts of notes as being plainly distinguishable: a

low murmuring of pure tones, quite pleasant to the ear; a harsh but subdued rattle, or alarm note, *wzzzt* or *wzzzp*, familiarly similar to that of the Crossbill; and the high-pitched shriek, which distinguishes the bird from all others, *dimp*. A little attention brings to light the fact that all the birds in the flock bring out this astonishing note at precisely the same pitch.

The same writer tells us that June, 1906, was memorable for the abundance of these birds in the vicinity of Spokane. "The very air of Cannon Hill and Hangman's Creek seemed charged with expectation of Grosbeaks' nests. But they were not for us. Nor has the nest yet been taken in Washington."

GENUS PINICOLA: PINE GROSBEEK.

Pine Grosbeak: *Pinicola enucleator leucúra*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Pine Grosbeak is another handsome bird that breeds in northern North America, some of them nesting in the White Mountains of New Hampshire, and in Maine. During the winter flocks of them may be seen in Iowa, Indiana, Pennsylvania, northern New Jersey, and southern New England; also in Minnesota and eastern Kansas.

They are about nine inches long and the males are a slaty-gray, more or less strongly washed with rosy-red which is strongest on crown, rump, upper tail coverts, and breast. The wings and tail are brown, the former with some white edgings. This plumage is not acquired until after the first nesting season. The female differs from the male in having no red, the crown, upper tail coverts, and breast being strongly washed with olive-yellow instead.

Seton tells us that these birds are very fond of the berries of the mountain-ash trees and sumach bushes. Also that its form has a general resemblance to that of the common Robin, but its very short, thick beak and its forked tail are striking differences. It is rather slow and inactive when in a tree, and when on the wing it has a loud whistle which is very characteristic; during the spring-time it has a prolonged and melodious song.

GENUS PINICOLA: WESTERN PINE GROSBEAKS.

California Pine Grosbeak: *Pinicola enucleator californica*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the west we find several subspecies of these handsome birds, but nowhere are they as abundant as we might wish them.

A bird known as the Alaska Pine Grosbeak (*Pinicola enucleator alascensis*) breeds from northwestern Alaska and Mackenzie to northern Washington, wintering in Montana. In plumage these birds resemble the eastern ones, but according to Allen Brooks, who has studied them in Washington, they quite differ from their cousins in *not* eating the mountain-ash berries. He says that they refused to touch them even after all the rose hips and snow berries were gone and they were reduced to eating weed seeds.

Mr. Brooks tells of a pair he found feeding young on the 17th of July in the Cascade Mountains, Washington, and adds that no red males were seen, though many gray males sang in the early morning from the topmost sprays of the balsams. It is his opinion that the red plumage of the male is acquired at the first moult or immediately

after the juvenal dress, and is usually retained for one season. In some males a duller red dress is carried through the summer, or more rarely a salmon pink one; but in most cases the dress of the second summer is a gray one like the female's, with yellow head and rump. Females may sometimes be seen with decidedly red heads and rumps—from the size and shape of the bill these seem to be very old birds.

The Rocky Mountain Pine Grosbeak (*P. e. montána*) is found in the summits of the mountains whose name it bears from Idaho, and Montana to northern New Mexico.

The California Pine Grosbeak breeds in the high region of the central Sierra Nevada, from Placer County to Fresno County, California.

These birds live in the high mountains among the pines and hemlocks. If perchance their haunts are invaded by man they are as tame and trustful as are all the birds of this group. We only wish that they were not dwellers of such high, inaccessible places so far from the beaten paths of man.

GENUS CARPODACUS: PURPLE FINCH. (Eastern.)

Purple Finch: *Carpodacus purpureus purpureus*.

FAMILY—FINCHES, SPARROWS, ETC.

EVERY time I look at one of these beautiful birds, I am convinced that the man who named it must have been color-blind, since there is no purple in his make-up, but rather a soft crimson, or rose-red, quite different than his name would lead us to believe. The upper parts of the male are brown striped, the head, rump,

and breast being a bright rose-red with a paler wash of the same color extending over the back, the outer webs of the wing feathers being finely edged with the rose, and the belly being white. The tail is notched, and the nostrils are concealed by a small tuft of bristly feathers. This bright plumage of the male is acquired only after the nesting season of the second year. Before this time the bird resembles the female and is so similar as to confuse the ordinary mortal.

The upper parts are a dark grayish brown, finely streaked with black, wings and tail darker; under parts are white, much streaked with brown, or gray. A white line over the eye is a distinctive marking. The birds are quite Sparrow-like in plumage, but the heavy rounded bill, the tufts over nostrils, and the forked tail will help differentiate them. They are about six inches long and plump of body.

These Finches are found only as far west as the Great Plains, breeding in Minnesota, North Dakota, northern Illinois, Pennsylvania, northern New Jersey, and Long Island, wintering from considerably north of its southern breeding boundary to the Gulf States from Texas to Florida.

They are not especially shy birds, often coming into the gardens to nest as well as choosing less frequented woodlands, or mountain forests for their homes.

It is one of our sweetest singers, its loud, care-free warble bubbling forth frequently and making the hearer feel that, after all, it is good to be alive; that there surely is something besides care and trouble in this world of ours.

But this jovial enthusiast has one fault, and that is his fondness for fruit buds, which he sometimes samples too frequently to suit the orchardist. I mistrust, however, that oftentimes the trees are only given a good pruning and, too, that if the buds were examined

it might be found that the birds were after a tiny insect hidden within.

These birds are fond of coniferous trees as nesting sites, placing a nest made of grasses, twigs, rootlets, lined with hair, from a few feet to quite a distance from the ground.

During the courting season the male sometimes indulges in a flight-song, rising high into the air and pouring forth his joyous strain as he descends.

GENUS CARPODACUS: CALIFORNIA PURPLE FINCH.

California Purple Finch: *Carpodacus purpureus cali-
fórnicus.*

FAMILY—FINCHES, SPARROWS, ETC.

THE bird in the west that represents the preceding is a subspecies known as the California Purple Finch. This western form is confined, for the most part, to the Pacific slope, being separated in the United States from the range of the eastern bird by the whole chain of the Rocky Mountains, in which neither form occurs.

For the most part this western bird nests in the higher altitudes, choosing conifer or deciduous trees, and placing the rather shallow nest on a horizontal limb, rather than a crotch.

When winter comes the birds, banded together, stray down into the valleys, where they glean seeds from the willow thickets, or come familiarly into our gardens. Like the Purple Finch, they are fond of fruit buds, oftentimes filling a blossoming apricot or almond in February or March. I have noticed, however, that these same trees have borne an abundance of fruit.

In my own yard they are fond of pepper berries, often

feeding upon the fallen ones strewn over the ground. It is sometimes hard to distinguish these birds from our common House Finch, or Linnet, which is so abundant in California. One can tell them by the note which is a sharp *pit* with an asperant sound, while the Linnet's is a loud, canary-like note. The Purple Finches are heavier than the Linnets and the females are easily distinguished by the white line over the eye of the former, and the whiter flanks. The male Finch has his under parts streaked only on the sides, instead of all over as has the Linnet.

In the west we have still another crimson Finch which is enough like the others to make identification difficult. This bird, known as the Cassin's Purple Finch (*P. cassinii*), ranges from northwestern Montana, and northeastern Wyoming, west along the coast to southern California, Arizona, and New Mexico. It differs little from the California Purple Finch in plumage, having, however, a duller rump, unstreaked under parts, and distinct streaks on under tail coverts, the top of the head having a more squarish patch of the crimson.

These birds are mountain lovers, raising their families in fir or pine trees and seldom coming down into the valleys even in their winter migrations, seeming to prefer wandering in bands along the brush-covered mountain sides.

In their musical ability and habits they resemble the rest of their tribe.

SUBGENUS BURRICA: HOUSE FINCH
OR LINNET.

House Finch or Linnet: *Carpodacus mexicanus frontalis*.

FAMILY—FINCHES, SPARROWS, ETC.

THE most common bird in southern California is the House Finch, or Linnet, as he is more commonly called. In plumage he resembles the Purple Finch, having perhaps less of the rosy shade over the back and having the white belly sharply streaked with brown. Sometimes these birds are very vivid in their red coloring which shows most conspicuously on head, rump, throat and breast; sometimes the shade is dull and more of a rose, but as these are the only common birds having this coloring, they are unmistakable. The females are much streaked gray birds which are lighter below and lack the white line over the eye which the Purple Finch has.

These birds are residents and at all times of year the gurgling, bubbling song of the male peals forth in no uncertain way. Even during August, when so often most birds are quiet, this irrepressible, jolly good fellow sings his canary-like song. The common note is a *cheep?* or *sweet?* given with rising inflection. At the nesting season, which begins early and ends late, the male pours forth his soul on wing, being too full of joy to remain quiet. He also often stations himself below his lady-love on some twig and with wings extended, and every feather on end, looks adoringly up at her while he sings like mad, now and then shifting his position but never ceasing his song. The notes pour forth so fast that they seem to trip each other. Never have I heard such impetuous, furious singing.

Though one could hardly think of bird life in southern California, where these birds are as common as are the English Sparrow and Robin in the east, without the Linnets, they are not confined to this part of the country, as they extend north into Oregon, Idaho, Wyoming, and south to Mexico, being found, also, in western Kansas and middle Texas.

There are several subspecies in the west, but we will consider only *frontalis*.

The female Linnet resembles the female English Sparrow, although she is not so heavy of build. In southern California only comparatively few of these Sparrow pests have straggled in, although abundant in middle and northern parts of State. Some have felt that because there are so many Linnets and because these birds are rather aggressive and are found all about the yards in the summer, and banded together in large flocks in the winter, that they take the place of the English Sparrow and will keep them out. Certainly we of the south hope so, for the Linnet, though sampling out ripening fruit to the extent that he is pronounced a pest by some orchardists, and is denied protection by law, is infinitely preferable to the foreigner.

At my own home I always keep out bread and suet for these birds and a pool affords bathing for them. They must have water and are seldom seen where it is scarce. They are, indeed, *house* Finches, building in the porch vines, in the eave troughs, bushes or nooks about the house when possible. The nest is a bulky affair built by the female. The male sometimes carries a straw, but usually he only flies back and forth and encourages with his jolly song. Madam also does the brooding, leaving the nest when she wishes food.

From four to six eggs are laid and incubated for about two weeks and then the proud father helps with the feeding, which is by regurgitation. When the nestlings,

which are drab babies like the mother, are two weeks old they are cared for by the male while the female lays another set of eggs, usually in the same nest, which is only patched up a little, or sometimes not touched. Year after year I have known these birds to use the same nest, simply adding to it. They are not clean in the care of the young and the nests become quite unsightly at times.

Slovenly, easy-going citizens they surely are, and yet I believe they add life and beauty to our sunny south-land.

While condemned as fruit eaters we must not forget that they are, also, seed-eaters and that throughout the winter large flocks of them live in our fields and eat our weed-seeds, thus doing much good.

GENUS LOXIA: AMERICAN CROSS-BILL.

American Crossbill: *Loxia curvirostra minor*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the Crossbills we have the queerest-looking birds of this large family because of the peculiar crossed bill which has given the birds their name.

The American Crossbill is about six and one-half inches long with plump body and beautifully colored plumage, being a dull red which is brighter on rump and browner on back with indistinct markings; wings and tail dusky and unmarked. The females are entirely different in color, being olive green, which becomes yellow on the rump. The head and back have indistinct black mottlings, and there is white mixed in the under plumage. The young are similar to the female, but have red and green markings. The male does not be-

come red until after his second summer, so that at some nests both birds will be yellowish, while others, those owned by the adult male, will have one bird red.

These parrot-like birds are famous for their erratic wanderings, seemingly having no regard for the laws of migration which govern most birds, but staying where there is the best food supply, regardless of season. The seeds of pine cones are their delight and they swing upside down, or otherwise, as with their peculiar bills they get these seeds, by prying and cutting open the cone, when they extract the seed with their tongues. They are gregarious birds, going about in flocks, flying in an undulating flight and keeping up a sharp clicking, or whistling, note. Being by Nature adapted to the seeds of cones, one may expect to find them where these cones are abundant and to seldom see them where the cones are lacking, although they do eat seeds of fruit and berries.

These interesting birds are found both east and west in favored localities, ranging along the western coast to the mountains of southern California, in southern Colorado, Michigan, and in the Alleghenies of northern Georgia; sometimes nesting in Massachusetts, Maryland, and Virginia; wintering irregularly south to southern California, New Mexico, northern Texas, Louisiana and Florida.

In the southwest the bird that is most frequently seen and that usually in the high mountains, is known as the Mexican Crossbill and differs from the American chiefly in being larger and having somewhat brighter colors.

Another Crossbill, which is known as the Whitewing, differs from the others in having white patches on the wings. It is even rarer than the others, but is found irregularly both east and west.

From my own observations I should say that to see

one of these Grosbeaks in southern California would be, indeed, a rare treat. A never-to-be-forgotten day! Such a pleasure came to the bird students the winter of 1920, which was a most unusual one for birds, many mountain species straying down into the valleys. Among others, these Crossbills were seen in the outskirts of Los Angeles, and other southern sections.

GENUS LEUCOSTICTE: GRAY-CROWNED ROSY FINCH.

Gray-Crowned Rosy Finch: *Leucosticte tephrocotis tephrocotis.*

FAMILY—FINCHES, SPARROWS, ETC.

To the west has been given a group of birds that are found nowhere else, and because of their love of high, inaccessible mountain peaks, they give little joy to mankind. These are the various forms of the Rosy Finch or Leucosticte.

The chief difference in the plumage of the birds of this genus is in the head, the body feathers being quite similar. The birds are about six and one-half inches long and the body is a rich brown; upper and under tail coverts, rump and flanks, and fore part of wings are of varying shades of pink. In the Gray-crowned the top of head is dark gray and the nape a lighter gray.

The home of this bird is in the high mountains above timber line from east-central Alaska to western Alberta, also on the White Mountain and the southern Sierras of east-central California, straying during the winter to lower altitudes in Colorado, California and east on the Plains to Nebraska.

HEPBURN'S ROSY FINCH.

L. t. littoralis.

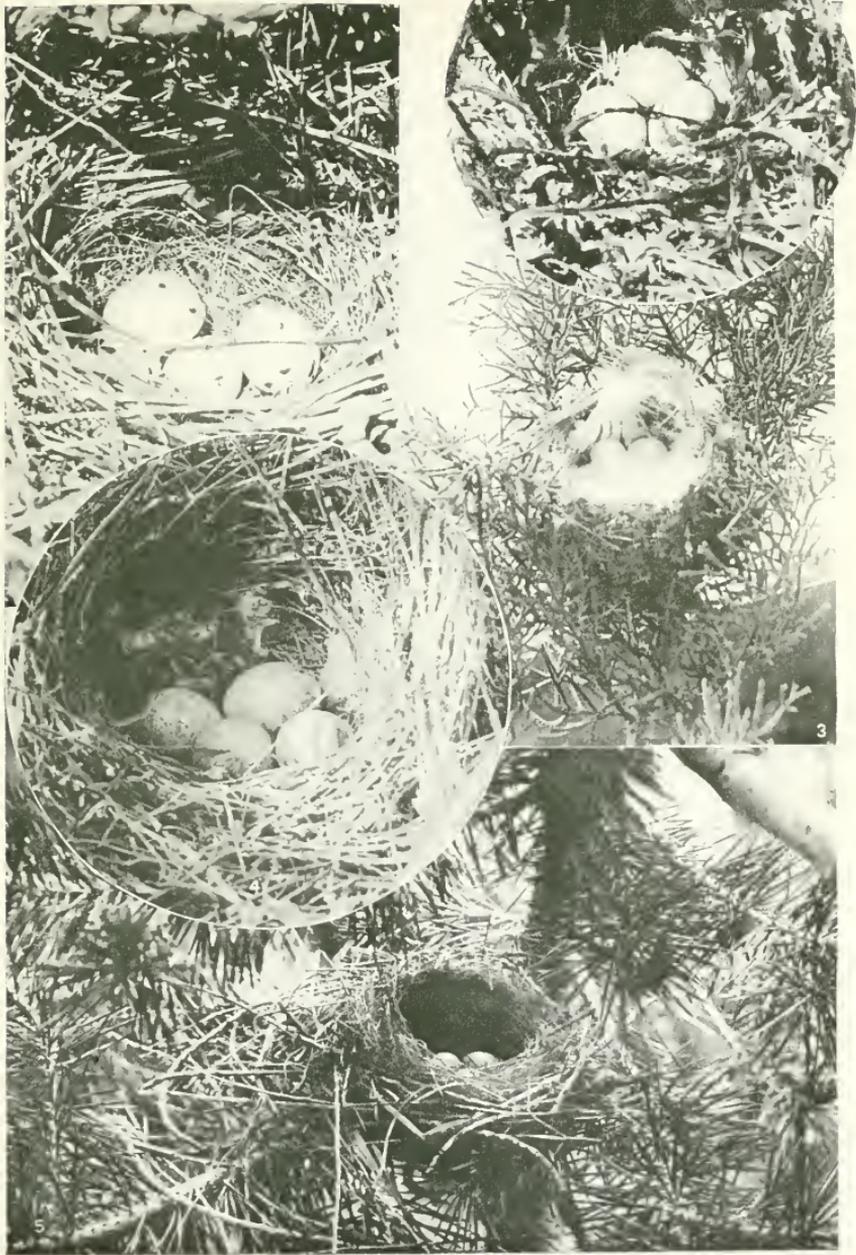
THIS subspecies breeds above timber line on mountains from Alaska Peninsula east and south to Washington; wintering along the Pacific Coast and southward in mountains to Oregon, Nevada, Utah, and Colorado; casual in Minnesota. It has the forehead and fore-crown black, the sides and back of the head being a clear ashy-gray. The female is somewhat paler and duller in coloration.

A bird known as the Black Rosy Finch (*Leucosticte atráta*) breeds in the Salmon River Mountains, Idaho, the Uintah Mountains, northern Utah, and probably other northern ranges; wintering south to southern Utah, Colorado, and southeastern Wyoming.

This bird differs from the others in having a brown forehead and crown and an ashy-gray nape.

The Brown-capped Rosy Finch (*L. austrális*) has no gray on head but a reddish-brown crown. It breeds in the highest mountains of Colorado and perhaps northern New Mexico, wintering in the valleys of Colorado, and southward into New Mexico.

Chapman says that in juvenal plumage, Rosy Finches are dull rusty gray below, browner above, with no crown cap, no rose in the body plumage, and but little in the wings or tail; the greater coverts and inner wing feathers are conspicuously margined with buffy or brownish.



1—WREN-TIT. 2—LARK SPARROW. 3—LAWRENCE GOLDFINCH.
4—BELL SPARROW. 5—OLIVE-BACKED THRUSH.



HOUSE FINCH OR LINNET.



NEST OF HOUSE FINCH.

GENUS ASTRAGALINUS: GOLD-FINCH

Goldfinch: *Astragalinus tristis tristis*.

FAMILY—FINCHES, SPARROWS, ETC.

ONE of the smallest, best known, and most beloved members of the Finch Family is the little Goldfinch, which is also known as the Thistle Bird and Wild Canary.

It is about five inches long and the male in summer plumage is a bright yellow save for wings, tail, and crown of head, which are black; the wings have white bars and tail white markings. The heavy bill denotes this bird a seed-eater and differentiates it from the Summer Warbler, which is sometimes called Wild Canary, also.

The female in summer plumage is much duller than her handsome spouse, having no black cap, but rather the entire upper parts are brownish tinged with olive green; the wings and tail are a duller black, but have the white markings; the under parts are a dull yellow. When winter comes the male changes his suit and becomes dull like the female, except that he still has his black wings and tail.

The young birds resemble the females, so that in the winter months, when the adult male has shed his brilliant color, and the birds are banded together in large flocks, the novice might wonder what had become of the Goldfinches.

Though a similar bird is found on the Pacific Coast, this species ventures not farther west than eastern Colorado. They nest as far south as Oklahoma, central Kansas, and northern Georgia, wintering in most of their breeding range and, also, southward to the Gulf States.

Except in the nesting season these Goldfinches are gregarious, spending most of the year in large, rollicking bands roving about the country and keeping up their cheerful *per-chic-o-ree*, canary-like, call as they bound through the air in their undulating flight. This flight, together with the white-marked wings and tail, will serve to identify them even though they are some distance away.

They are essentially seed-eaters, as their heavy bills denote, being especially fond of thistle seeds, dandelions, milk weed, sunflower, and other garden seeds. During the nesting season, which is usually later than that of most birds, they also eat, and feed their young, a good many insects, plant lice being favorites. Forbush records that 2,210 eggs of white birch aphids were found in the stomach of one of these birds. Never have I known them to do harm, although they are friendly birds that come freely into the gardens, unmindful of mankind.

The nests are works of art, being small, compact cups which are placed in an upright crotch and made of fine fibers and plant down, sometimes lined with horsehair.

The female does all the brooding, but the male is most solicitous and feeds her on the nest. She has a pretty way of quivering her wings and begging in plaintive tones to be fed.

The young are fed by regurgitation by both parents, sometimes, however, the male feeds the female and she, in turn, feeds the nestlings beneath her.

Besides the *per-chic-o-ree* call and several single canary-like notes, these birds have a ringing, enthusiastic song which is sung with great gusto during the courting days, the little performer taking short flights while he sings like mad, the notes bubbling forth in great rapidity, to the great enjoyment of the human observer, and no doubt, the great awe of the little female for whom it was intended.

GENUS ASTRAGALINUS: WILLOW
GOLDFINCH.Willow Goldfinch: *Astragalinus tristis salicámans*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the Pacific Coast region, extending from Washington to southern California, is found the Willow Goldfinch, which differs chiefly from the eastern bird in having slightly shorter wings and tail and the yellow not quite so bright. The summer female is also browner with the under parts less yellow.

In the southern part of their breeding range the birds are residents and at any time of year may be seen in the willow and alder thickets along the streams, where in company with their cousins, the Green-backed, they feast upon the pussy-willow seeds, of which they are especially fond, and the alder tassels; swinging and balancing, keeping up their conversational *pe-tit* or *per-chiê-o-ree* in perfect content. It is to be regretted that these jolly, handsome little Finches are content to stay in the willow bottoms rather than visit the door yards and gardens as do their eastern cousins.

A similar bird known as the Pale Goldfinch (*A. t. pálido*) is found in the Rocky Mountain plateau, breeding from British Columbia, south to central Nevada and southern Colorado, and wintering below the United States. Dawson records these birds as nesting in eastern Washington, most of them wintering farther south.

In habits and sunny dispositions they are true members of the Goldfinch tribe.

GENUS ASTRAGALINUS: GREEN-
BACKED GOLDFINCH.

Green-Backed Goldfinch: *Astragalinus psaltria hesperophilus*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Pacific Coast is blest with another species of these birds which is the most abundant of any of them, staying about the gardens of southern California all the year around and enlivening things with their jovial songs.

This little Green-backed Goldfinch is about four inches in length, and is found from southern Oregon, and Utah south along the coast to southern Lower California and extreme southwestern New Mexico. It is also known as the Arkansas, but in the A. O. U. Check List a bird bearing this name is attributed to northern Colorado, to central-northern Texas and south, being casual in Wyoming.

The Green-backed is not so handsome as is the Willow, having the bright yellow on his breast, only, his back being olive, with cap, wings, and tail black, the two latter having white markings which are conspicuous in flight. The female lacks the black cap and her under parts are a duller yellow.

The female does the building, constructing a dainty cup-shaped nest of plant fibers and down, and placing it in an upright crotch of shrub, thistle, fruit, or shade tree, from a few feet to twenty or more. At times she is very tame and trusting, allowing her back to be stroked as she broods or sits beside the nestlings.

In the nest I have watched, the eggs, sometimes as many as five, were laid succeeding days, the female beginning the brooding with the laying of the first day.



1—GREEN-BACKED GOLDFINCHES AT BIRD BATH.
2—GREEN-BACKED GOLDFINCH AND YOUNG.



HOUSE FINCH AND GAMBEL'S SPARROW.

In consequence, the nestlings hatched irregularly and they also left the nest the same way. Some of them would be in the yard, where they allowed me to handle them, while others had not left the nest. They were the cunningest of baby birds with their olive green plumage.

Like the other Goldfinches, these little Green-backs are seldom quiet. A favorite note during the nesting season is *sweet, sweet?* given with a rising inflection, and *teé-hee, téé-he-he-he*. The song is a sweet, canary-like warble which is given on the wing as the bird bounds through the air in his undulating flight. The male also uses a circling flight song before the female as does the eastern bird.

During the winter months large flocks of these dull-colored birds may be seen in the open canyons and fields, where they feed upon weed seeds.

GENUS ASTRAGALINUS: LAWRENCE GOLDFINCH.

Lawrence Goldfinch: *Astragalinus lawrencei*.

FAMILY—FINCHES, SPARROWS, ETC.

IN California, west of the Sierra Nevadas and below latitude 40°, and in southwestern Arizona and New Mexico during the winter months, is found the most charming member of this group, the quaint little Lawrence Goldfinch. The upper parts are brownish gray with rump and wings greenish yellow; the median under parts are yellow with soft gray sides. But the thing which gives the bird the peculiar appearance is the black face-patch. This black marking forms a cap on the top of the head and extends down over the face, ending in a point on the throat. It gives him a clown-like appear-

ance which belies his actions, for he is gentle and modest. The female is demureness itself in her quaker garb, being duller than the male and lacking the black head gear. The young resemble the female, but are duller and have the lower parts indistinctly streaked.

This Finch is found mostly on the mesas and mountain canyons, as well as in the pine forests below 6,000 feet. Throughout the winter months they may be seen in small flocks in not too thickly settled communities, where they gather the seeds unmindful of inspection. They are by no means as abundant as one might wish them.

GENUS SPINUS: PINE SISKIN.

Pine Siskin: *Spinus pinus*.

FAMILY—FINCHES, SPARROWS, ETC.

ANOTHER small member of the Finch Family is the Pine Siskin, a bird which in many ways resembles the Goldfinches. But as the name would indicate, they are fond of the evergreen trees which grow in high altitudes. One is relieved to find that one species does for this bird wherever found, whether in the forests of the northeastern United States or the mountains of the West. We are so accustomed to several subspecies, that this oversight on Nature's part (or man's) is surely a relief.

The Siskins are much striped little birds, being brownish above, and white below, streaked with olive brown. But the thing that distinguishes them and saves them from oblivion, is the yellow patches on wings and tail which show plainly in flight.

They are gregarious, especially during the winter months, when they may be seen in almost any part of the country banded together in solid flocks and foraging

among the alder catkins and willows which they seem to enjoy as much as do the Goldfinches.

They have the same way of bounding through the air in undulating flight, frequently giving their call notes, many of which resemble those of their yellow cousins.

Dawson gives one note of the Siskins—a *zúm* or *zzeem*, which is different from that of any other species.

In his "Birds of Washington" he tells us that the nests of these birds are built in evergreen trees from a few feet to a great height. Seen from below they might easily be mistaken for accumulated trash rather than a nest. In the midst of this pile they build the nest of weed stalks, dead fir twigs, mosses, plant down and hair, which may have a lining of finer material. According to the same authority these midgets are capable of building a nest as elegant as that of the Audubon Warbler, and one nest he found in Tacoma was for two weeks passed by as that of a golden-crowned Kinglet—so much did it resemble that bird's mode of architecture.

Though these Siskins are not abundant in southern California, I have sometimes seen small groups of them eating weed seeds along the roadsides during the winter months. They were not at all shy, only flying up to a tree when I overtook them, and returning to their eating when I had passed them by.

If ever you come upon a flock of much-striped Sparrow-like birds that are about five inches long, which in flight show a yellow patch on each wing, and yellow feathers on end of tails, you can safely feel that you are beholding those cunning little birds—the Pine Siskins.

GENUS PLECTROPHENAX: SNOW-
FLAKE.

Snowflake: *Plectrophenax nivalis nivalis*.

FAMILY—FINCHES, SPARROWS, ETC.

THE little Snowflake, or Snow Bunting, is a bird unique in plumage. In this large family we have listed some of our brightest-plumaged birds, such as the Cardinal, Goldfinch, and Indigo bird, as well as many that are among the dullest so far as coloring goes; but in the Snowflake we have a bird with so much white in his make-up as to make his name quite appropriate. These birds live in Alaska and the far north, where they build their nests on the ground and rear their young, but when the weather becomes too severe they come down into northern United States, and along the Pacific Coast as far as Oregon. When the thermometer has dropped way down, perhaps reaching forty degrees below zero, and a raging blizzard is making the out of doors unbearable to most living things, then come the Snowflakes in immense flocks, bounding in their undulating flight through the air, those in the rear, rising and flying over and in front of the others, until they do, indeed, look like flakes of snow driven before the fury of the gale. But this cold is their delight. Never need we expect to see them in mild weather. Sometimes the rare Lapland Longspur is with them; that bird that is also a dweller of the far north; sometimes, too, we find Horned-larks foraging with them in pursuit of such seeds as the snow-laden ground will yield.

In their summer plumage we are told that they are white with black back and some other markings, but when they come to us the black has been replaced by a rusty brown which shows on crown and back, with some

black markings on the latter. The inner tail feathers and the end of the wings are dark and a touch of the rusty appears on the sides; otherwise the birds are white. They are dwellers of the ground, almost never seeking shelter in a tree, preferring the base of some corn stalk, weed, or bush, or even the snow itself as a refuge. As they flit about among the brown weeds that show above the white ground, their protective coloration is perfect.

These fascinating waifs that come to enliven the landscape when most other life has deserted us, are slightly larger than an English Sparrow—about seven inches long. Dawson speaks of the notes of these birds as a mild babel of *tut-ut-ut-tews*.

GENUS POÆCETES: VESPER SPARROW.

Vesper Sparrow: *Poæcetes gramineus gramineus*.

FAMILY—FINCHES, SPARROWS, ETC.

WE turn with regret from the bright, or distinctly plumaged members of this family, to those of somber garb, not because the gayer ones are the most interesting, but because the brown Sparrows are so hard to differentiate. In many cases it is almost impossible for the ordinary student to distinguish between them.

The Vesper Sparrow is one of these confusing birds, having his prevailing upper parts brownish, with black and buff streakings on back, with some of the upper wing coverts tipped with white, and two above these that have rufous tips; the two outer tail feathers are white, for which we are duly grateful. The white under parts are streaked with black and buffy.

This little Sparrow is a ground bird and during the summer is abundant in many parts of the middle and

eastern States, frequenting dry, open uplands, roadsides and open meadows. These birds are not gregarious as are the Snowflakes or Longspurs, although small flocks may be seen during migrations and oftentimes several pairs nest in the same locality.

As they run along on the ground before you, or dodge behind some bush, they are hard to observe; but when they take wing the white feathers on the tail are conspicuous markings.

Though these birds are ground dwellers, when the spirit moves them to sing they mount a shrub, post, pole, or any available object, and there pour forth a loud, clear, ringing song that has something of the ring of the Song Sparrow. Early morning and late evening are favorite song times, but he does not limit himself to these times. Forbush says that the bird sometimes sings to greet the rising moon, and even flutters into the air, like the Skylark, with an exquisite burst of song. Mr. Burroughs has well named it the Vesper Sparrow.

Two similar birds represent this one on the West Coast. One is the Western Vesper (*P. g. confinis*), and the other is the Oregon Vesper (*P. g. affinis*).

Mrs. Bailey says of the Western Vesper: "In the San Francisco mountain country, Dr. Mearns says the western vesper sparrow is a common summer resident in the upper pines, and was found breeding in the grassy openings up to 10,000 feet. It is also common in sagebrush districts, and in settled parts of the west is commonly seen on roadside fences. It may be recognized by its white outer tail feathers as it flies, or, as it sits on a post, by its dull coloration and pale bay shoulder patches."

It has the same way of singing from a post, or tall weed, as has its eastern cousin.

GENUS PASSERCULUS: SAVANNAH
SPARROW.

Savannah Sparrow: *Passerculus sandwichensis savanna*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the Savannah Sparrow we have one of those maddening striped brown birds that might be any one of half a dozen species, the pale yellow spot in front of the eye and on the band of the wing being helpful markings. The white breast is thickly marked with brown, which is sometimes merged into a spot like the Song Sparrow, which is about the same size. However, the tail of the Savannah is short and notched, rather than long and rounded.

The bird is a dweller of the meadow, or savanna, often frequenting portions of the sea coast, but is also found in fertile valleys, upland meadows and pastures.

They breed in the far north and south to northern Iowa (casually Missouri), northern Indiana, mountains of Pennsylvania, Connecticut, and Long Island, and casually in southern New Jersey, wintering from southern Indiana and New Jersey, south to southeastern Mexico, the Gulf Coast, and the Bermudas.

It is a ground bird, seldom mounting higher than a weed stalk or post, where it pours forth its weak little song, which is a grasshopper-like trill, given by Dr. Jonathan Dwight as *tsip-tsip-tsip*, *se e-e-s, r-r-r*.

Breeding on the Pacific Coast north of California to the western border of the Great Plains, wintering throughout California, and south, is found the Western Savannah Sparrow, which is fully as inconspicuous and nondescript as his eastern cousin. You may look for him in prairie grass, weed patches, or meadows and if you

are able to tell him from others of his tribe that frequent similar locations, you may consider yourself an ornithologist.

GENUS PASSERCULUS: MARSH SPARROWS.

FAMILY—FINCHES, SPARROWS, ETC.

I AM indeed sorry to have to record that in the west there are several other Sparrows that might be described by the description of the previous one, except that the yellowish spot before eye and one wing, are lacking.

Breeding along the salt marshes of San Francisco Bay and north to Humboldt Bay, straying south in winter, is found the Bryant's Sparrow (*P. s. bryanti*), a small bird that is a bundle of brown stripes and markings. In the salt marshes of southern California, is the Belding's Sparrow (*P. beldingi*), another white speckled-breasted, and brown striped little bird that resembles the Song Sparrow. However, his note is a fine *sit*, quite unlike our door yard favorite, although in his friendly way of flying all about you as you watch him in the rank marsh growths, he resembles *Melodia*.

The song is rather a sweet little warble which is chiefly pleasing because usually it is about the only one heard, and it is given frequently and with vim.

The Large-Billed Sparrow (*Passerculus rostratus rostratus*) is found at the coast in southern California, where it frequents the wharves and sandy beach nearby.

It is about six inches long and has light grayish brown upper parts, which are indistinctly streaked. The under parts are almost entirely streaked with sandy brown. The large, swollen bill, which curves from the base, is helpful in identification.

These birds are rather handsome and are not at all shy, running about on the beach near you, and bounding away in rapid flight if you come too close, often giving their weak *sit* or *chip* as they go.

GENUS CHONDESTES: LARK SPARROW.

Lark Sparrow: *Chondestes grammacus grammacus*.

FAMILY—FINCHES, SPARROWS, ETC.

ONE of the most attractive and common birds in its range is the Lark Sparrow, a summer resident of the Mississippi Valley east of the Great Plains, and extending east to western Pennsylvania, western Maryland, and northwestern West Virginia; sometimes straggling into other nearby States.

The bird on the Pacific Coast, and extending east to central North Dakota and eastern Texas, is a subspecies known as the Western Lark Sparrow (*C. g. strigatus*), a bird differing chiefly in the intensity of colorings rather than markings.

These birds usually go about in small flocks in the open country and are a delight to the beholder, not only because of their pleasing manners and vocal ability, but because they are easy of identification. Well do I remember the first time I saw them in the west as they foraged among the weeds of a vacant lot next my home, flew onto the telephone wires, or into the trees in the most friendly way. As they rested above my head the black button upon the otherwise immaculate white breast, identified them, the white crescent at the end of the spread tail as they flew likewise proclaimed them, as well as the bridled head with its brown and white striped crown, its short white stripe below eye, broad chestnut

patch below that on side of head, its white throat edged with black stripes. The rest of upper parts are in sparrow-like markings, but one hardly considers them so pronounced as the other plumage.

In California these birds are residents in most of their range, and most welcome they, indeed, are. Their nests are placed on the ground, in bushes, or trees as fancy dictates, dried grasses, fibers, rootlets and similar material being used.

These birds are indeed joys to the student, for they are easy to identify, not alone by their plumage, but their song, also, gives them away. It is a rich, clear, measured song which Ridgway has compared to a series of chants. Sometimes it is loud and again it is so low that the bird seems to be singing for his own amusement. But the thing which differentiates it is the peculiar little purring noise, a sort of muffled trill, which the bird is forever dragging into his otherwise sweet performance. The effect produced by a tree full of singers is, indeed, unique.

GENUS ZONOTRICHIA: WHITE-CROWNED SPARROW.

White-Crowned Sparrow: *Zonotrichia leucophrys leucophrys*.

FAMILY—FINCHES, SPARROWS, ETC.

THE thought of the White-crowned Sparrow brings to the bird student nothing but pleasant memories of a bird charmingly garbed and sweet of voice. To be sure he is a migrant, only, in most parts of our country, spending his winters from southern Arizona, southern Kansas, and the Ohio Valley, south, and nesting, for the most part, in the high mountains of the far north. We are

told also that some of these birds nest in the mountains from southern Oregon to central California, and east to Wyoming and southern New Mexico.

They are about seven inches long and are particularly handsome, well-groomed birds, whose name, however, is something of a misnomer, since the crown is not white in the way the name would suggest. Rather it is a black-and-white striped, the center being white, with a black stripe on each side which also extends to the bill and before the eye. On each side of this, extending back from the eye, is another white stripe. The nape and under parts are a soft gray; the back is a dark grayish-brown streaked with darker and white. The wings and tail are brownish, the latter with two irregular white bars. The bill is horn-colored.

Though these aristocrats of the Sparrow tribe are rare enough to make their presence fully appreciated wherever seen, we are fortunate in having two subspecies that are abundant on the Western Coast for a portion of the year. These are the Gambel, or Intermediate, Sparrow, which breeds from Alaska to Montana and eastern Oregon; migrates south through the western United States and winters from northern California and Utah, south; straggling east in migration to Minnesota, Iowa, Kansas, and eastern Texas. Also Nuttall's Sparrow, which breeds on the Pacific Coast as far south as San Luis Obispo County, California, wintering from central Oregon, southward.

The chief difference between these birds and the White-crown is in the crown, the black before the eye being wanting in the subspecies, and the white stripe over the eye extending to the bill.

In the Nuttall the median white crown stripe is narrower than the black ones enclosing it, and the upper parts have a brown cast rather than gray.

The young of all these birds do not get the black-

and-white crown the first season, the head being adorned instead with gray and brown stripes.

These Sparrows are gregarious during migrations and in their winter homes, going about in large bands and often confusing the novice who thinks there are two species of birds.

Usually by the 26th of September the first Gambel Sparrow appears in southern California. Sometimes the coming is a day earlier; sometimes it is several days later. However, soon after this time they are abundant, flocking into our gardens, feeding from our bird tables, and bathing in our bird pools. One of the delights of the early morning is their clear whistling song that peals forth loud and measured in the beginning, ending more rapidly. All winter long and until late in April these birds are constantly about when they go farther up the State, or beyond, to nest.

The ordinary note is a soft *sit* that has some ventriloquistic power that makes it hard to locate. These White-crown swarm on my bird table, where they often grab large crumbs of bread and fly to the ground with them, a merry chase ensuing as some less fortunate companion tries to rob the owner of the bread. In their noisy teasing bouts they remind me of a flock of barnyard fowls. Then, too, more than once have I been provoked with them because they drive away from the table the Audubon Warbler, and other small birds that also like suet, bread, and cake crumbs.

Some complaints come that these birds nip off the sprouting vegetables and flowers in the early spring and that unless covered until well started the gardens are a failure. Grain from the chicken yard is also greatly relished, but who would begrudge these cheerful, care-free bands a little food? Surely, the joy of having them about in rain or sunshine repays any harm they may do. Then, too, they do good by eating weed seeds and noxious insects.



1—GAMBEL'S SPARROW. 2—YOUNG BLACK-HEADED GROSBEEK.
3—GAMBEL'S SPARROW. 4—YOUNG BLACK-HEADED
GROSBEEK AND YOUNG BULLOCK'S ORIOLE.



1—YOUNG SONG SPARROWS.

2—NEST OF SONG SPARROW.

3—SONG SPARROW AT BIRD TABLE.

GENUS ZONOTRICHIA: GOLDEN-CROWNED SPARROW.

Golden-Crowned Sparrow: *Zonotrichia coronata*.

FAMILY—FINCHES, SPARROWS, ETC.

OFTENTIMES in the flocks of the Gambel Sparrows on the Pacific Coast, one is delighted to behold a bird that is similar in size and plumage, save for the crown of the head, which is yellow and black, the stripe starting from the bill being yellow in front, but gray farther back, and the enclosing stripes being a deep broad black. These showy Sparrows breed in Alaska and the far north, wintering from southern Oregon down the coast, sometimes straggling during migrations to Nevada and Colorado.

Never are they abundant as are the White-crowns (Gambels) and sometimes none are seen all winter long. Their song is quite different from their cousin's, but is inspirational and easy to imitate. It consists of three whistles in a descending scale, each whistle long drawn out and deliberate. It is the quality of the notes, the soft liquidness of them, that makes them so beautiful. Would that we might more often hear and see these charming birds.

GENUS ZONOTRICHIA: WHITE-THROATED SPARROW.

White-Throated Sparrow: *Zonotrichia albicollis*.

FAMILY—FINCHES, SPARROWS, ETC.

A BIRD which is closely allied to these White-crowned Sparrows is a rare winter visitor on the western coast,

being sometimes seen in California, Oregon, Utah, and Colorado, but breeding in the northern tier of States as far west as Montana, and migrating in the fall into the middle Eastern States, and sometimes going as far south as Florida and Mexico.

This White-throated Sparrow differs chiefly in plumage from the White-crowns in having a yellow line before the eye, and at the bend of the wing, and in having a square white patch on the throat. The females and young have the yellow duller, and the crown patch streaked in brownish and black, rather than black and white.

In their way of banding together in sociable groups and coming into the hedgerows and woodland undergrowths they resemble the White-crowns. The song, although sweet and attractive, differs from that of its cousin just considered, consisting, according to Dr. Judd, of a high, plaintive, drawn-out pipe, that once heard is seldom forgotten. In New England this song has been thought to suggest the words, *Peabody! Peabody! Peabody!* and the Sparrow has received the name of Peabody Bird. Equally characteristic, though less generally known, is a curious clinking call-note that is uttered at first loudly, then in a softer, more conversational tone, when the birds are repairing in flocks to their quarters for the night during their sojourn in the south.

The nests are made of coarse grasses, rootlets, strips of bark, or similar material, and lined with finer fibers, and are built either on the ground or in some low bush.

Dr. Judd tells us that the food for the year, as a whole, as indicated by stomach contents, consists of 19 per cent animal matter and 81 per cent vegetable matter. Of the vegetable food, 3 per cent is grain, 50 per cent weed seeds, and the remainder chiefly wild fruit.

During the winter of 1918-19 one of these handsome birds came daily for several weeks to the bird table of a Los Angeles bird lover in the Hollywood district. It

stayed about with a flock of Gambels and was a delight to all beholders.

GENUS SPIZELLA: CHIPPING SPARROW.

Chipping Sparrow: *Spizella passerina passerina*.

FAMILY—FINCHES, SPARROWS, ETC.

PROBABLY the best known, most widely distributed member of this family is the Chipping Sparrow, also known as Chippy, and Hair Bird. West of the Rockies a similar Sparrow is known as the Western Chipping (S.p. Arizónæ).

Dr. Judd is authority for the statement that these birds breed in every State in the Union (with the possible exception of Florida), in Canada, and on the tablelands of Mexico. In their northern breeding range they are summer residents, only, coming north in April and returning south in October.

Most welcome visitors they, indeed, are, being dainty of form and extremely friendly in manner, coming about the yards, along the roadways, in the pastures, plowed lands, and orchards. Anywhere and everywhere, in fact, one may find a family of Chippies.

The adult birds are from five to five and one-half inches long with backs that are streaked in brown, black, and buffy, wings with inconspicuous bars, tail slightly notched, under parts grayish white, bill black, nape and rump gray. But the thing that distinguishes the bird from others of his kind is the crown of head, which is a warm rufous edged by a line of white or gray, below which is a black line which passes through the eye. The forehead is black and is cut by a white line in center. The old birds in winter plumage, and the young ones,

lack the rufous cap and the black before it, having the top of the head streaked like the back, and the bill brown. The young birds also have breasts streaked with black. The rump remains gray at all times of year and is a good distinguishing mark.

The plumage of the western birds is similar but the coloration is paler.

These little Sparrows are great talkers and they care not that their voices are not particularly pleasing. The common note is a metallic *chip*, which is kept up with such monotonous regularity as to be almost unbearable. The song, if such it can be called, is a similar insect-like trill, or buzz. *Chippy-chippy-chippy-chippy-chippy* the bird sings in his high-pitched wiry voice with as much enthusiasm as if the performance were really worth while. To the little female brooding her treasures I doubt not that this "song" is a sweet one.

The nests are daintily made of fine twigs, grasses and rootlets, lined with horsehair, which has given the bird one of its names—Hair Bird. They are placed in bushes, vines, or trees from a few feet to twenty. The eggs are a delicate Robin's egg blue spotted at one end with black, which is unusual since most Sparrows have whitish ground color overlaid with brownish markings.

Two broods of from three to five young are raised.

Wonderful stories are told of the good these little Chippies do. Great quantities of caterpillars and grasshoppers are eaten by them, one having carried fifty caterpillars to its young in twelve hours; fifty-four cankerworms were eaten at one time by one of these birds, and they are fond of browntail-moth, gipsy-moth, caterpillars, army worms, and pea lice, which in one year caused a loss of the pea crop of Maryland of \$300,000, as well as ants, beetles, bugs, leaf hoppers, etc. More than that the birds are great seed eaters doing an infinite amount of good in destroying noxious weeds.

With regret I record that the Western Chipping Sparrow is not so friendly, nor common, as is his eastern cousin. In the foothills and mesas of southern California the birds are residents and nest about the homes, but in the valleys they appear in many places as winter visitors, only. In January and later I often have them in my yard and their trill-song is heard, but with the spring months they depart and are not common in this locality.

GENUS SPIZELLA: BREWER'S SPARROW.

Brewer's Sparrow: *Spizella bréweri*.

FAMILY—FINCHES, SPARROWS, ETC.

IN western North America, breeding in the United States in east central Montana, and northwestern Nebraska, southwestern Texas, southern Arizona, west along the Pacific Coast is found the Brewer Sparrow, locally known as Sagebrush Chippy because of his fondness for the arid regions, where grows most abundantly the sage. However, these birds also frequent the sage-covered slopes of the mountains, going as high as 8,400 feet, where Mrs. Bailey found them singing on the snowy crest of the Sierra. Below, however, on the sunny slope grew the inevitable sage. In the fall many of them go down into the valleys, perhaps on their way farther south, and in small flocks come into our gardens, where they spend their time eating weed seeds.

In size and plumage they quite resemble the Chipping Sparrow, especially in its winter plumage, having rufous crowns which are divided by a lighter line, the same buffy stripe edging the crown patch above the eye. There is a suggestion of a dark cheek-patch and a black

stripe each side of throat; the under parts are a soiled white and the uppers very much striped in browns and tans, with tan wing bars showing in the young birds. Beautiful, indeed, are these little striped birds and perfect is their protective coloration.

The nests are usually placed in sagebrush a few feet from the ground, and are made of fine twigs, grasses, fibers, and lined with horsehair. In the color of the eggs, which have a blue ground, the resemblance to the Chipping Sparrow is carried out.

The note is a sharp *wézee*, and the song, though having a trill in it, far excels that of the Chippy.

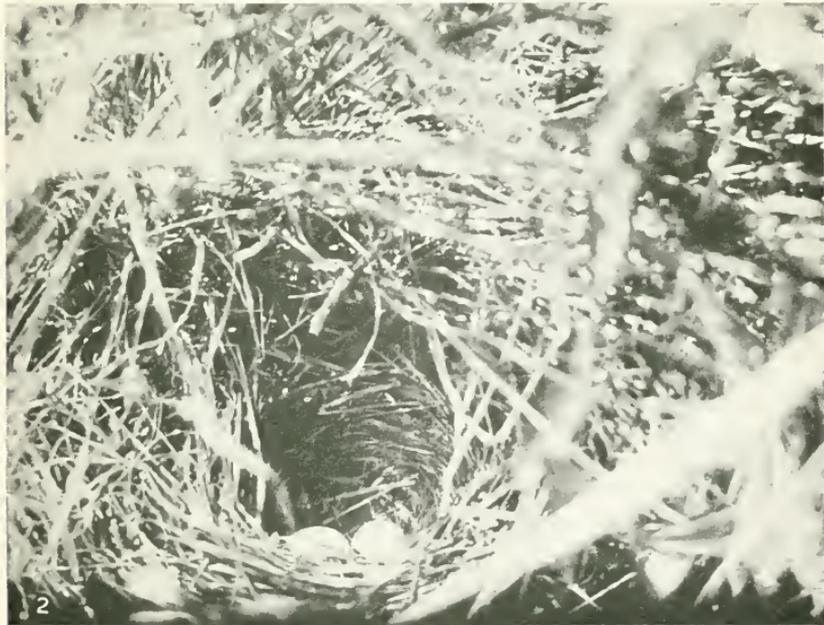
In parts of Michigan, Montana, Colorado, Nebraska, and wintering from Arizona, New Mexico, and Texas, south, is found the Clay-colored Sparrow (*S. pallida*). It is a bird of the plains and in many ways resembles Brewer's, the chief difference being that *pallida* has a plain gray hind neck, while *bréweri* is uniformly streaked on head, neck, and back.

GENUS SPIZELLA: BLACK-CHINNED SPARROW.

Black-Chinned Sparrow: *Spizella atrogularis*.

FAMILY—FINCHES, SPARROWS, ETC.

DURING the summer in the desert and coast regions of southern California, Arizona, and New Mexico is found the Black-chinned Sparrow, which in song and plumage somewhat resembles its eastern cousin, the Field. The head, neck, and under parts are gray, with under tail coverts white; back rusty brown narrowly streaked with blackish; bill pinkish brown; *throat and ring around bill black*. The female has the black around bill restricted,



RUFUS-CROWNED SPARROW AND NESTS.



Copyright by Brown Brothers,
SLATE-COLORED JUNCO.

LAZULI BUNTING.

or lacking, and in the young it is gray, and the chest is indistinctly streaked.

In southern California these birds are common on bushy mountain sides up to 7,000 feet during summer.

GENUS JUNCO: SLATE-COLORED JUNCO.

Slate-Colored Junco: *Junco hyemalis hyemalis*.

FAMILY—FINCHES, SPARROWS, ETC.

ONE of the friendliest, most welcome visitors of the cold winter months through the eastern United States is the plump little Slate-colored Junco, a bird which breeds in the far north and in the higher altitudes from Minnesota and the mountains of New York and New England northward, and winters southward to the Gulf States. It also strays farther west and is a visitor along the Pacific Coast, although several other Juncos are more common.

This Black Snowbird, as he is sometimes called, is about six and one-fourth inches long and may be known by his gray upper parts, the same dark shade extending from bill to breast, the lower breast and belly being white; the bill is pinkish white with a black tip, and two outer tail feathers are distinctive markings. The female is similar but is lighter colored and usually more rusty.

These little Juncos come freely about the yard in large flocks and gladly pick up the crumbs thrown out to them. They come, however, not for the bounty we may spread for them, but primarily for seeds of pigweed, chickweed, foxtail, ragweed and any other kind that still peeps above the snow or remains in some sheltered spot.

The ordinary note is a sparrow-like *'tsip*, but with the

coming of spring a song not unlike that of the Chipping Sparrow is indulged in, and although not particularly musical, the uniting of the many singers is most pleasing.

These birds nest on the ground, using grasses, moss and rootlets, and sometimes a lining of hairs. Mrs. Bailey tells us to look for them in a tangle of fallen tree-tips, logs, and upturned roots. "A pair I once surprised in such a place at first sat and chirped at me—with bills full of food—but soon they were flying freely back and forth to the upturned root where they had hidden their nests."

GENUS JUNCO: OREGON JUNCO.

Oregon Junco: *Junco hyemalis oregonus*.

FAMILY—FINCHES, SPARROWS, ETC.

ON the north Pacific Coast the Oregon Junco spends its summers, coming for the winter down the coast as far south as Santa Cruz and San Mateo Counties, California. It differs from the common bird of the east in having the head, neck, and chest black, which is outlined against the white of the under parts in a convex, rather than a straight line; the middle of the back is a deep chestnut brown; sides are a deep pinkish, and the three outer tail feathers with white; the outside pair wholly white. In the female the back is slaty, the crown and neck washed with brown, sides and flanks duller; bill pinkish, tipped with dusky. The young birds are streaked on backs, buffy below.

GENUS JUNCO: SHUFELDT'S OR
INTERMEDIATE JUNCO.

Intermediate Junco: *Junco hyemalis connectens*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Shufeldt Junco differs from the Oregon chiefly in being somewhat larger (six or six and one-half inches), and in the males in having a more grayish back; in the females it is sepia to drab; the back of the head and throat are also more slaty.

These Juncos breed from British Columbia to northern Oregon, and winter over the entire Rocky Mountain tableland to eastern Colorado, Arizona, New Mexico, and western Texas, and are also known as the Washington Junco, Hybrid Snow-bird, and Rocky Mountain Juncos.

While the Oregon Junco is a winter visitor in Washington, Dawson tells us that with the coming of spring these birds appear from the south and become common residents throughout the State, in or near coniferous timber, from sea level to limit of trees. Banded together they are jolly, rollicking birds, full of good cheer, which is expressed in happy twitters. According to Dawson, the birds gather in March for a grand concert, the song being a "sweet little tinkling trill, not very pretentious, but tender and winsome. Interspersed with this is a variety of sipping and suckling notes, whose uses are hard to discern. Now and then, also, a forcible kissing sound may be heard, evidently a note of repulsion instead of attraction, for it is employed in the breeding season to frighten enemies."

At the end of the brief song period, Juncos deploy throughout the half open woods or prairie borders of the entire State, the variety and interest of their nesting

habits being scarcely exceeded by those of any other bird. "In general they appear to be guided by some thought of seclusion or protection in their choice of nesting sites. Steep hillsides or little banks are, therefore, favorite places, for here the bird may excavate a cool grotto in the earth, and allow the drapery of the hillside, mosses and running vines, to festoon and guard the approaches." "Several nests have been found in old tin cans flung down upon the prairie and only half obscured by growing grasses. Again the birds trust to the density of vegetation, and shelter in the grass of unmowed orchards, weed-lots, and meadows."

GENUS JUNCO: THURBER'S JUNCO.

Thurber's Junco: *Junco hyemalis thurberi*.

FAMILY—FINCHES, SPARROWS, ETC.

WHILE the Shufeldt Junco may stray down into California in the winter-time, the common bird of this State is the Thurber's Junco, which breeds in the mountains from southern Oregon south through the Sierra Nevada and coast ranges of California, wintering in the valleys and straying into Arizona.

The bird resembles the Oregon Junco, but has longer wings and tail; head, throat, and breast are deep black, contrasting with the light brown back; the sides are buffy, rather than pink. The young are streaked on the brown back, which is lighter than adults. The white outer tail feathers are distinctive markings as the birds fly.

In southern California these Juncos are not particularly abundant, even in the winter-time, although small flocks of them may be seen feeding on the ground in open canyons or brush-covered foothills; sometimes also in the gardens when they are near their chosen haunts.

From October until April one may run across them, but with the coming of spring the birds go to the mountains, being most abundant above 5,000 feet. In their ground-nesting habits they differ not materially from other Juncos.

The only bird that I can conceive of any one confusing with the Junco is the Spurred Towhee, which might be found in the same locality as these smaller members of the family, scratching away on the same hillside. However, the Juncos are much smaller, have more white on the tail, and the sides are not such a pronounced brick-red as are those of the Towhee. Then, too, the Juncos go about in large flocks while the Towhees are in pairs, or alone.

The careful observer can make no mistake, while the casual one might.

In the coast strip of San Mateo and northern Monterey Counties, California, is found a bird which is called the Point Pinos and differs from Thurber's in having the sides of head and throat *slaty*.

The Gray-headed Junco, which has ash where the others are black, and a bright rufous back, is sometimes a winter visitor in southern California, breeding in southern Wyoming, Colorado, Utah, Nevada, and northern New Mexico.

Other members of this group are Ridgways, Townsends, Arizona, and Red-backed.

GENUS AMPHISPIZA: DESERT SPARROW.

Desert Sparrow: *Amphispiza bilineata deserticola*.

FAMILY—FINCHES, SPARROWS, ETC.

IN this little Sparrow we have a bird which is similar to the preceding, being slightly larger and having paler

and browner upper parts with the white spot at the end of inner web of outermost tail feather much smaller.

In the hot, arid regions of southwestern United States and northwestern Mexico, west from west Texas to California, north probably to southern Idaho and Washington, this is one of the common Sparrows of the sage or mesquit-covered plains. The common song is not unmusical and reminds one somewhat of that of the Lark Sparrow. Mrs. Bailey gives as one of the commonest of its varied modifications, *Tra-rée-rah, réé-rah-ree*. Dawson gives *Blew chee tee tee* as one song, and *wheu, wheu, whiterer*, began nicely but degenerated in the last member into the metallic clinking of Towhee.

GENUS AMPHISPIZA: BELL SPARROW.

Bell Sparrow: *Amphispiza belli*.

FAMILY—FINCHES, SPARROWS, ETC.

IN the valleys and foothills of California, west of Sierra Nevada, and the Colorado Desert from about latitude 38 south to northwestern Lower California; also on San Clemente Island is found the Bell Sparrow, which is a fairly common resident of the brush-covered washes and mesas of the interior of southern California, extending up to 5,000 feet in the summer-time. The bird is about five and one-half inches long and although modestly garbed, it has distinctive markings. The black and white stripes on the sides of throat, the black breast blotch on the otherwise white under parts, eye ring and spot above lores white, are different from other Sparrows except the Sage, from which, however, it may be told since the latter has a series of narrow blackish streaks on the side of the throat but *no continuous streak* as has

belli. The upper parts of Bell are gray, usually not distinctly streaked; the edge of wing is yellowish, and the black tail feathers are indistinctly marked with lighter. One cannot help but rejoice that this little bird is not a bundle of brown stripes as are so many of his relatives, and that he is just a little different from most of the Sparrows.

GENUS AMPHISPIZA: SAGE SPARROW.

Sage Sparrow: *Amphispiza nevadensis nevadensis*.

FAMILY—FINCHES, SPARROWS, ETC.

THIS bird, as the name indicates, is a dweller of the arid regions where grows the sage, being a characteristic inhabitant of the Great Basin region of the western United States, west to the eastern base of the Sierra Nevada, south from central Washington and Wyoming to southeastern California and southern Colorado, wintering from southeastern California, southern Nevada, and southern Utah to Arizona, southern New Mexico and southwestern Texas.

It is about six inches long and has grayish brown upper parts with the back usually narrowly, but distinctly, streaked; the under parts are light with the white throat set off by dusky streaks, a distinctive marking. The eye ring, line extending back from eye, and sometimes a short median line on forehead, are white; sometimes the bird has the dusky spot on center of breast, the sides and flanks buffy and streaked with dusky; the wings and tail are dull black with light brownish or pale grayish edgings, outer web of lateral tail feather white. The young birds resemble those of the preceding species in having the chest streaked and two buffy wing bars.

These birds place their nests in a crotch of a sage, or other bush, using small twigs, sage bark, and dried grasses, lining them with wool, rabbit-fur, cow hair, or feathers.

Dawson says of the song of this bird in Washington that in general characteristics it is a sort of subdued musical croaking, mellow and rich at close quarters, but with little carrying power. He says that the bird throws its head well back in singing, and carries the tail more nearly horizontal than do most Sparrows. Several songs are given, they seeming to differ in different parts of the State. One is *Heo, chip peway, chip peway, chip peway*; another is *Tup, tup, to weely, chup, tup*. A more pretentious ditty, occupying two seconds in delivery, runs *Hooriedoppety, weeter wee, doodlety pootát er*,—an ecstasy song, wherein the little singer seems to be intoxicated with the aroma of his favorite sage.

In the Owens Valley and adjacent areas in eastern California and extreme western Nevada is found the California Sage Sparrow (*Amphispiza nevadensis canescens*), a bird resembling the preceding one. Willet says of it that it is a summer resident of the elevated Upper Sonoran and Transition sage valleys of the southern Sierras, south to the Sierra San Gabriel, Los Angeles County. Slightly migratory to lower levels in winter, south at least to Riverside County.

GENUS AIMOPHILA: RUFOUS-CROWNED SPARROW.

Rufous-Crowned Sparrow: *Aimophila ruficeps ruficeps*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Rufous-crowned Sparrow is a California bird that is found west of the Sierra Nevadas and as far north as Marin and Placer Counties.

It is about five and one-half inches long and wears a reddish-brown cap which has given it its name. Sometimes there is a short black line starting from the bill in middle of crown. The upper parts are brownish lightly streaked with darker; the sides of head and under parts are light gray; black stripes border the throat. Though the bird lacks the white line above the eye, and the black line through the eye as has the Chipping Sparrow, still there is a resemblance between the two species.

These Sparrows are locally common in the foothills, where one may hear their plaintive, yet liquid, *dear, dear, dear*, as they flit about on the weed stalks or low bushes. A scolding note is a short, sharp one given as rapidly as possible. A soft *sit* is another.

On the 10th of April several years ago it was my good fortune to come upon a pair of these Rufous-crowned Sparrows nesting on a brush-covered hillside near a canyon. There were plenty of more secluded places the bird might have chosen since this one was in the private grounds of a family, and situated just above their chicken yard.

The nest was placed directly on the ground under a clump of grass over which white convolvulus was twining. In the same clump there were blooming wild Owl's clover, brodiaeas, and lupines. The nest itself resembled that of the Song Sparrow, being made of brown grasses, lined with finer fibers and a few horse hairs. It contained three pure white eggs, which were so large that so far as size went they might better have belonged to a Towhee.

In my watching of this nest I found that the female did all the brooding, leaving the nest when she wanted food, and that the male was not much in evidence.

The female was a close sitter, staying at one time one hour and thirty-one minutes on the nest, and another time I watched one hour and forty-six minutes before she left the nest and slipped stealthily through

the grass, then flew up the hill. She was gone twenty-nine minutes and when she came back she perched on a weed stalk and with twitching tail called *dear, dear*, at me until I stepped about ten feet back, when she took the nest. Once she was safely settled under that leafy canopy she minded not if I sat within four feet of her.

On the 15th the eggs hatched and three orange-skinned nestlings which were partially covered with black down, took their places.

Then busy days began for both birds. I was interested to note that from the first they brought visible food to the nestlings, inch-long green worms and dark insects forming part of the diet.

By placing my camera a few feet from the nest and covering it with a green cloth and sprays of sage, I was able to crawl under it and get a bulb exposure of the male and young, the old bird raising his eyes at the click of the camera but remaining motionless.

When the young were about a week old they were taken, probably by a prowling cat of the neighborhood. I sometimes wonder that any of our birds succeed in raising their young, so many enemies have they. For the ground-nesters the snakes and cats do their share of mischief.

In Arizona is found another form of this Sparrow known as Scott's (*A. r. scotti*), which has paler under parts, and the back with grayer margins. In Texas a third form is called the Rock Sparrow (*A. r. eremæca*), and has the crown darker, more chestnut than in Scott's Sparrow, and the bill still grayer. These birds are enough alike to be confusing, but since they occupy different parts of the country one may be quite sure about them, at least during the nesting season.

GENUS MELOSPIZA : SONG SPARROWS.

PROBABLY most bird lovers are familiar with the little Song Sparrow, although I presume that few of them realize how many forms this bird assumes in the North American continent. While east of the Rockies it shows but little individual variation, *M. melodia melodia* being the common Sparrow and the only other one being Judd's (*M. m. juddi*), which is slightly grayer and found in North Dakota, west of the Rockies; there are twenty-one subspecies, two of which (*M. m. montana* and *M. m. merrilli*—Mountain and Merrill's) are found in the region of the Rocky Mountain Range, all the others ranging along the Pacific Coast from Alaska to southern Mexico.

Dr. Frank M. Chapman, in Vol. 12 of "Bird-Lore," gives a comprehensive article about the range and varying plumage of these birds.

He says that "the Song Sparrow is the most plastic of North American birds, or, in other words, it is so readily affected in size and color by the climatic conditions under which it lives that, given some slight change in the climate of a region, we expect to find it reflected in the Song Sparrow of that region. Broadly speaking, the general colors of Song Sparrows are related to the rainfall, while their size is related to latitude. Thus the Song Sparrows of arid regions are pale, while the Song Sparrows of humid regions are dark. For instance, the Desert Song Sparrow which inhabits the Colorado desert, where the annual rainfall averages about six inches, is light colored and pale looking; while the Sooty Song Sparrow that lives on the northwest Pacific coast, where the annual rainfall averages over ninety inches, is dark and rich in coloring.

“Observe, also, that the Mexican Song Sparrow at the southern extremity of the range of the species is the smallest of the race, measuring some six inches in length, and that there is a gradual increase in size northward until the maximum is reached at the northern extremity of the range of the species, where the Aleutian Song Sparrow attains a length of nearly nine inches.

“If we compare only the palest Song Sparrow with only the darkest, we might well believe, so unlike are they, that each form represents a distinct species; but when we include in our comparison representatives of all the twenty-three races of Song Sparrows we find complete intergradation in color and in size. Nowhere can one draw the line. As the climatic conditions under which the birds live change, the birds keep pace. Cause and effect go hand in hand. Here we have a species in flower, as it were, a single Song Sparrow stalk with its twenty-three blossoms, any one of which might make as independent growth as a species if it were separated from the parent stem. Doubtless some day the separation will come, when we shall have several species of Song Sparrows, each with its group of races, but at present we have only one species, divided into some twenty-three subspecies, or species in process of formation.

“A variety of reasons may be advanced to account for the pronounced geographical variations shown by the Song Sparrow. Its wide range indicates physical adaptability and ready adjustment to differences to food and habitat. Its variations in size, while they conform to the general law of increase in size northward, are exceptionally marked, and not equaled by those of any other North American bird—a further indication of an inherent plasticity.

“The species is comparatively non-migratory. Several races, notably in California, are permanently resident, and a number of contiguous and restricted areas may

there be found each to have its own form of Song Sparrow. Such strictly non-migratory species are continually subjected to the influences of their environment, which are heightened by permanent isolation."

GENUS MELOSPIZA: SONG SPARROW.

Song Sparrow: *Melospiza melodia melodia*.
(*Eastern.*)

FAMILY—FINCHES, SPARROWS, ETC.

THE eastern Song Sparrow is about six and one-half inches long and is a study in browns, his back being striped in two shades, his crown being a warm brown with a light gray streak through the middle and over each eye; a dark line through the eye and two each side the throat, together with the black button on the white breast, and the brown-streaked sides, are distinctive markings. The tail is long and rounded and is usually carried well up, but is a very expressive attribute, being pumped up and down in time of excitement.

They are fond of water and usually several pairs may be seen in the underbrush or rank growths in moist places. While one never sees Song Sparrows in flocks, as we find Linnets or Goldfinches, yet they are companionable birds that live near each other.

Wherever found, whether in garden or woodland, they are welcome adjuncts that bring life to any locality, for they are the jolliest of birds. In winter or summer, sunshine or shower, their merry, cheery songs peal forth in musical cadence. It is not a long song, but it is given with a vim that makes one feel that, after all, things might be worse. The common note is a metallic *chip*.

In my own garden in Los Angeles, California, several Song Sparrows, probably *Melospiza melodia coóperi*, are

nestlings are fed at once with visible food, which I have watched the old birds gather from the lawn, rather than by regurgitation.

The young usually stay in the nest about ten days, but those in my pampas were usually taken by some cat, despite my vigilance, before they were able to leave the nest. Perhaps some day we shall succeed in getting our cats licensed and the strays obliterated so that this tragedy of bird-eating may be lessened.

These Sparrows have two or three broods a year and in the fall my lawn is alive with them. It is interesting to hear the youngsters trying to sing. A low, sweet, but somewhat uncertain warble is given, sometimes as the bird hops back and forth on the lawn hunting out the seeds, or insect life.

The Mountain Song Sparrow (*Melospiza melodia montána*) ranges in the Rocky Mountain and Sierra Nevada region, breeding in the Transition Zone from eastern Oregon, southern Idaho, and Montana to middle eastern California and northern New Mexico; winters south to western Texas and northern Mexico.

Heermann's Song Sparrow (*M. m. heérmanni*) is found in the central valleys of California, principally San Joaquin and Sacramento valleys; in winter casually to Nevada.

Rusty Song Sparrow (*M. m. mórhna*) is found in the Pacific Coast belt, breeding from extreme southern Alaska to southern Washington; winters south to southern California.

Santa Barbara Song Sparrow (*M. m. Juddi*) is found on the Santa Barbara and Santa Cruz Islands, while the San Clemente (*M. m. eleméntæ*) inhabits San Clemente, San Miguel, and Santa Rosa Islands, California.

Merrill's Song Sparrow (*M. m. mérrilli*) ranges throughout the northwestern United States, breeding from Fort Sherman, Idaho, west and south through

Washington and Oregon east of the Cascades to Shasta County, California; winters south to Nevada, Utah and Arizona.

Alameda or Salt Marsh Sparrow (*M. m. pusillula*) is found in the salt marshes on south side of San Francisco Bay, California.

San Diego Song Sparrow (*M. m. coóperi*) ranges from Monterey Bay, California, south to San Quinton Bay, Lower California, and east to Fort Tehon and San Bernardino.

Mendocino Song Sparrow (*M. m. cleonénsis*) is found in the coast strip of southern Oregon and northern California from Yaquina Bay, Oregon, to Tomales Bay, California.

GENUS MELOSPIZA: LINCOLN'S SPARROW.

Lincoln's Sparrow: *Melospiza lincolni lincolni*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Lincoln Sparrow is about six inches long and in plumage somewhat resembles the Song Sparrow to which it is closely allied. The stripings on back and head are much the same, but those on the breast are finer and the black button is lacking. A broad cream-buff band across the breast, a cream-buff stripe on either side of the throat, and the sides tinged with cream-buff, are distinctive markings.

In habits and song there is much difference, since the Lincoln is a shy dweller of the evergreen woods of the east and the high altitudes of the west, rather than a dooryard visitor.

While these birds are most abundant north of our country, they also breed in northern Minnesota, and

northern New York; and on the west coast in the Cascade, Sierra Nevada, and Rock Mountains to southern California (mostly from 7,000 to 9,000 feet), and northern New Mexico; wintering from San Jacinto Mountains, California, southern Oklahoma, and northern Mississippi, south; casual only east of the Allegheny Mountains, south of Washington, D. C.

J. Dwight, Jr., says of this bird's vocal powers: "Sometimes venturing timidly to the outer boughs of a spruce, he surprises the hearer with a most unsparrowlike song. It is not loud, and suggests the bubbling, guttural notes of the House Wren, combined with the sweet rippling music of the Purple Finch, and when you think the song is done there is an unsuspected aftermath. The bird sings very little and at long intervals, and is seldom heard during the later hours of the day, ceasing at once if anybody approaches."

On the west coast from western Washington, migrating to California in winter, is found the Forbush Sparrow (*M.l. striata*) which is similar to the preceding species, differing chiefly in having upper parts more of an olive cast with the black markings coarser and more numerous.

GENUS PASSERELLA: FOX SPARROW.

Fox Sparrow: *Passerella iliaca iliaca*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Fox Sparrow is one of our reddest and largest members of the family, the resemblance of his color to the animal giving him his name.

It is a bird of the far north, where it builds its home, being seen in our country chiefly as a spring and fall migrant, but wintering from lower Ohio and Potomac

Valleys (sometimes farther north) to central Texas and northern Florida; casual on the coast of southern Alaska and in California.

The prevailing color of upper parts is rufous brown, the feathers margined with cinnamon-brown, with wings and tail brighter; bluish-slate about the head; under parts white thickly marked with arrow-heads and long dashes of rufous and black; lower mandible yellowish. The young have the colors duller and markings less distinct. The birds are over seven inches long.

They are lovers of damp thickets and roadside shrubbery, seldom straying far from brush or tall weed growths. Usually there are several of them about, they seeming to prefer small, loose flocks, as well as being fond of the companionship of Juncos and White-throated Sparrows. In their fondness for damp, leafy places and their ability to make the leaves fly as with quick jumps they scratch among them, they are not unlike their cousin Towhees—birds that make about as much noise as a barnyard fowl.

In musical ability, however, the Towhee must take a back seat as this big red Sparrow, though having a feeble *tseep* note, is a marvelous songster. The notes are full, rich, and somewhat plaintive, but bubble forth with spontaneous abandon, and when heard from many throats at the sunset hour, it is a never-to-be-forgotten chorus.

GENUS PASSERELLA : WESTERN FOX SPARROWS.

FAMILY—FINCHES, SPARROWS, ETC.

WE turn with a sigh from the one bird of the east to the seven subspecies given in the A. O. U. Check List

that inhabit the west. In their loud, rich voices and plumage they resemble their eastern cousin, being unmistakably members of the Fox tribe.

Shumagin is a dweller of the Alaska Peninsula and Islands whose name it bears, wintering north to northern California: the *Thick-billed* inhabits the mountains of California, breeding on both slopes of the Sierra Nevada from Mt. Shasta to Mt. Whitney, wintering in southwestern California; casual in Marin County. *Slate-colored* (*P. iliaca schistácea*) occupies the Rocky Mountain region, breeding from northwestern Montana south to the mountains of Lassen and Modoc counties, northeastern California, to the White Mountains of eastern California, and to central Colorado; wintering south to southwestern California, Arizona, New Mexico, and east to Kansas. *Stephens* breeds in the Tejon, San Gabriel, San Bernardino, and San Jacinto mountains. *Sooty* (*P. iliaca fuliginósa*) breeds in northwestern Washington, wintering along the coast to San Francisco. *Kadiak* (*P. i. insuláris*) breeds in Alaska and winters along the coast to southern California. *Townsend's* (*P. i. townsendi*) breeds on the coast of southeastern Alaska and winters south to Humboldt County, California.

While there is some difference in the shade of color and markings of these various birds, it seems not wise to try to differentiate them in this work. The person who really wants to know just which Fox Sparrow he is beholding had better consult the Director of the best Museum in the State where the bird is seen. (Located at the State University in California.)

GENUS PIPILO: SPURRED OR SAN
DIEGO TOWHEE.Spurred Towhee: *Pipilo maculatus megalónyx*.

FAMILY—FINCHES, SPARROWS, ETC.

WHILE the Towhee of the east is not found on the western coast we have in the northwest a similar bird, several subspecies of which are found along the Pacific and farther east. The Arctic Towhee (*P.m. árticus*) breeds as far south as west central Montana and northwestern Nebraska, occurs in migration in western Wyoming and northeastern Utah, wintering from eastern Colorado and southern Nebraska to southern Texas; being casual in Illinois and Wisconsin.

The chief difference in this bird and the eastern lies in the white markings of the wings which are much more plentiful in the western bird. This increased white on upper wings applies to all the western species.

Probably the most common, best known member of this group is the Spurred Towhee, which is listed in the A. O. U. Check List as the San Diego Towhee. It is, however, best known by the former name, which it received because of its long hind claw, rather than a *spur*, as we understand it.

This bird occurs in California, except the coast strip north of San Francisco Bay, being a resident.

Though it is a frequenter of wooded canyons, brush-covered hillsides, and thickets, it is a friendly bird, and if, perchance, you live near its chosen haunts, it will come into your yard to scratch under your shrubs and trees, visit your chicken yard, your bird table, and sometimes even venture into your house.

Not only does their loud scratching proclaim their presence, but as they work they keep up their nasal call

note which to some quite resembles the *me-aóu* of the cat, to others seems to say, *tow-heé-e* or *to-wheé-e*, and still others hear the bird calling *Ma-cée-e*. Besides this common call the birds also give a half-muffled low note that always reminds me of a satisfied grunt. In contrast to the musical little song of the eastern bird, this western one has only a thin, unmusical trill, a sort of *skeé-ee-e* or *speé-ee-e*, which is heard mostly during the nesting season.

To me this Spurred Towhee is one of our handsomest birds, his deep black head and neck, his red eye, black and white uppers, the white thumb-marks on the outer feathers of his black tail, his white and rufous under parts, make a costume that is decidedly oriental in its make-up. The female, like the eastern bird, is brown instead of black, and the young are homely, much striped and mottled birds.

There is enough resemblance between this male Towhee and the Black-headed Grosbeak of the same family, to cause some people to mistake one for the other, although the latter bird has a much heavier bill, more bright color, and is quite different in manners, seldom frequenting the ground, which is the chosen haunt of the Towhee. In this and the calls the two can be distinguished.

Another bird that is similar in plumage and ways to the Towhee, but is much smaller, is the Thurber, or Sierra Junco, which has the sides buffy, rather than rufous, and the back light brown. The Juncos forage on the ground as do their larger cousins, but in southern California they are winter visitors, only, and go about in flocks.

These Towhees usually build their nests right on the ground, using coarse weeds for the foundation and finer fibers for the lining. One which I found in southern California was placed under a clump of coarse grasses, scarcely four feet from the beaten path in a foothill

canyon. We flushed the bird as we passed along, else we would never have found her. Even then it took some hunting to locate the nest.

It contained three large, light blue eggs which were thickly flecked with reddish-brown, and were evidently just laid.

Scrambling up the hillside where we could watch the nesting habits of these birds, without their knowing it, we seated ourselves and waited.

The pair were across a little gully flying about in the low bushes and it was half an hour before they came to the nest. Then the female came gradually, flying from bush to bush, her mate following her every move. As they reached the tall sycamore tree, which grew just a few feet from the nest, the male ascended it, singing his trilling song as he went, and the female skulked on to the nest. Then the male flew away down the canyon.

There was a little open space in front of the Towhee's nest, which she was obliged to cross to reach it, and by watching this spot we could tell of her comings and goings. She was always stealthy about it, never flying right down to the nest, but hopping several feet along the ground to it. The male never came to the nest, but when he called from a near-by tree, the female left and joined him. He always saw that she was safely back again before he flew down the canyon.

Just two weeks from the time we found the nest there were three young birds in it. These nestlings were much larger than the young of the common California Towhee (a bird not found in the east). They had pink skin and in a few places there were tufts of dark down. Their mouths were large and edged with white.

For four hours we stayed near the nest and watched the movements of the old birds. It was found that the female stayed on the nest most of the time and that the male did the feeding. He gave his *mé-aou* call as he

drew near the nest, then flying on to the ground slipped quietly along to the young. Sometimes he stayed one minute before slipping out and flying upon the sycamore tree, which he usually did, where he gave his *skeé-ee-e* song before flying down the canyon. It was of interest that he always went in the same direction.

Being anxious to know whether the male bird fed the young directly, or gave it to the mother for them, we arranged a blind of an old umbrella, placing it scarcely a foot from the nest, and awaited developments.

In seven minutes the female returned and having satisfied herself that all was well, despite this new arrangement, took the nest.

Now followed a long, tiresome wait for the watchers. If you have ever tried waiting, motionless, for half or three-quarters of an hour, in any position, however seemingly comfortable at first, you will know something of the discomfort experienced in the forty-eight minutes of waiting before the male appeared.

Finally he came, calling in a low voice, and cautiously advancing through the rank weeds to the entrance of the nest. As he neared the nest the female moved to one side and he fed the young by a pumping motion, which may have been regurgitation or simply bringing the food from the throat where he was carrying it, as is the custom of the California Towhee.

Before taking our departure we took one more peep at the nestlings and were amazed to find that one of them had its eyes open, a remarkable thing considering that it was only one day old. Most young birds are three or four days old before their eyes open.

The next day a companion and myself, armed with cameras, visited the canyon. The distress of the female was apparent before we reached the nest, and we wondered what the trouble could be since never before had she so minded our presence.

Finally, stooping down and looking into the nest we beheld a sight which caused our cries to mingle with those of the poor mother, for coiled in the nest was a big gopher snake. A punch of the umbrella sent it away but the nest was empty, the three nestlings having made a meal for this slippery monster.

The distress of the mother was pitiful. Again and again she cautiously inspected the nest, evidently unable to believe that the nestlings were gone.

Soon the male appeared carrying a big miller in his mouth. He, too, inspected the nest and repeatedly tried to find the young to feed, but failing to do so, finally ate the miller. The fact that he expected to feed this insect to the young birds seemed to me to prove that these birds do not feed by regurgitation.

At another Spurred Towhee's nest where I watched, the labor of feeding was divided by the parents in an interesting way. Evidently the young had left the nest and were in different clumps of bushes. It was impossible to see them, but their whereabouts was told by the actions of the birds. The female made frequent trips into one clump, while the male likewise carried food to another. Sometimes the food was soft bread brought from a bird lover's table on the hill above.

Once in hopes that we might see the young, we sat down in the clump of bushes where the female was feeding. Presently the male came over, and giving his call in a low, grumbling way began inspecting us. Slowly he circled entirely around us and then, evidently satisfied with our looks and actions, went back to his charges and paid no more attention to us.

GENUS PIPILO: OREGON TOWHEE.

Oregon Towhee: *Pipilo maculatus oregónus*.

FAMILY—FINCHES, SPARROWS, ETC.

FROM central California north is a bird which differs from Spurred chiefly in having a shorter hind claw and less white on the wings and tail, known as the Oregon Towhee.

Like the others of his tribe he is a dweller of the edges of clearings, underbrush, and thickets, but is even shyer than the others and is accredited also of being less social, even with his own relatives.

In Washington a bird similar to *megalónyx* is given the name of Spurred Towhee (*P. m. montanus*) by Dawson, but the range is different, it breeding from the Rocky Mountains to the Cascade-Sierras and in the Pacific Coast district of central California; retiring from the northern portion of its range in winter.

I believe that we need not bother ourselves with these various subspecies since knowing one bird you know them all.

GENUS PIPILO: CALIFORNIA
TOWHEE AND ITS ALLIES.

California Towhee: *Pipilo crissalis crissalis*.

FAMILY—FINCHES, SPARROWS, ETC.

ON the Pacific Coast, extending from the foothills of southwestern Oregon south to Santa Barbara, Kern, and northwestern San Bernardino counties, or about two-thirds down the State, is found a Towhee which is

not seen in the east. This and a similar bird which is known as Anthony's Towhee (*P. c. senicula*), found in southern California, is one of the commonest birds of this region, being a resident and very tame and friendly. Nearly everywhere, except the immediate coast region, these birds are found, be it mountains, foothills, canyons, city parks, or dooryards.

The California Towhee is eight and one-half or nine inches long and both sexes are alike. They are plump, short-legged birds, having rather long tails and are a dull brown in color, the throat being a light rufous which is usually finely streaked with dark brown; the middle of belly is lighter and the under tail coverts are a deep rufous which shows conspicuously as the bird bobs over a fence, or down from a limb. The young are similar but the breast is streaked for a few weeks.

The Anthony Towhee is somewhat smaller with the upper parts darker and the lower parts grayer. To the ordinary observer they are too similar to warrant any division.

The common call of these birds is a thin *chip* which has caused them to be known by the small boys as Chippies or Brown Chippies. Their friendly, Robin-like way of staying about the dooryards has given them the name of Ground Robin.

These birds are not gregarious but rather go about in pairs, or families. At all times of year several of them may be seen in my garden, coming continually to my bird table and bath, flying into the house, hopping about in the most matter-of-fact way in search of any crumb that may have escaped the housewife, and going leisurely out when they get ready. I know of no bird that is so at home in the abode of man.

Because the Anthony Towhee is the one I know best it will be the subspecies most fully treated but in habits,

as well as plumage, it quite resembles the California.

Sometimes at the nesting season, but not always, the male sings a song which for musical ability does not amount to much, but all unconscious of this, or perhaps to make amends for it, the song is sung with the greatest frequency from housetop, or doorstep, with an enthusiasm that we humans would do well to emulate. Sometimes this song is not heard until after the first nestlings are reared and weaned. Perhaps it is then a pæan of thanksgiving that the nestlings have escaped the feline tribe, or other mishap.

Two or more broods are raised in a season and nests of young have been found as early as the last of March. While these Towhees are so tame and trustful for the greater part of the year, when they are raising a family they become suspicious and slip to and from the nest so stealthily that the casual observer does not detect their nesting place.

Usually some dense mass of greenery is selected for the nest; a low bush, a vine against the house, or a tangle, or densely leaved crotch, in some low tree, being favorite sites. Both birds work at the building, carrying twigs, rags, strings, and coarse material for the foundation, and lining the cup-shaped inside with finer fibers, rootlets, or hair. At one nest where I watched the female did most of the building, and that after six o'clock when it was nearly dark. It is their way to build leisurely, a little each day, sometimes taking two weeks at the building. Then the female usually waits several more days before brooding begins. And, too, I have known them to build one nest, then leave it and build another. They are placed from two to twelve feet from the ground, but usually low. From three to five pale blue eggs, which have dark pencilings at the larger end, are laid and brooded entirely by the female for two weeks. During this time the bird leaves the nest at infrequent intervals

for food, the male never feeding her as does the male in the Goldfinch families.

When the young hatch the male does more than his share of feeding for the first few days, and the food is soft green worms or other visible insect life, showing that these Towhees do not feed by regurgitation.

After the feeding the male bird usually waits on the edge of the nest until the return of the female, but never have I seen him take it. At these times he is quite fearless, one of these birds allowing me to place a camera within two feet of him and take a time exposure without moving a feather or winking an eye.

The female was much more distracted at my presence and *chipped* vigorously if I approached the nest. I do not in the least wonder at the bird making a fuss for so many nests are destroyed by prowling cats while the young are still too small to venture forth, and, too, these ambitious nestlings hop from the parental home when they are about nine days old and unable to fly, so that very many of them are destroyed. Their legs are long and the feet large and the rapidity with which they get over the ground is a wonder, still they are not quick enough for a hungry feline.

An interesting act of parental love recently came under my observation. A pair of Towhees were nesting in an apricot tree in the yard, and we knew that there were newly-hatched young in the nest. About this time a young bird of this species which had strayed from the nest was brought to me, and put in a cage in the screen porch near the apricot tree. Its cry for its parents greatly distressed *our* Towhees so that we finally opened the door that they might come in and see for themselves that it was not their nestling. This they did and having satisfied themselves, they went about their home duties with no thought of the orphan inside. This did not surprise me for my observation has been that old birds do

not usually feed young birds other than their own, even though they be the same species.

About a week later we noticed that the old birds were again trying to get into the porch where the young bird was kept. When the box containing the nestling was placed outside, one of them at once jumped upon it and tried to get in. Upon removing the screen-top one old bird went in with its mouth full of worms and fed the baby, which responded with loud crys and quivering wings, showing that it was quite ready to be adopted. Finding that these Towhees were sincere in their desire to care for the nestling, we released him, and, fed faithfully by both adults, he grew to maturity.

Striving to find a reason for the changed attitude of these old birds, I went to their nest only to find it empty. Some prowling cat had, undoubtedly, found them. In this empty nest seemed to be the solution of the actions of the Towhees. So strong was the parent love within them that, bereft of their own nestlings, they were glad to adopt this strange bird.

From west central Arizona and southeastern Colorado south to northeastern Sonora and western Texas is found a similar bird which is known as the *Canyon Towhee* (*Pipilo fuscus mesoleucus*).

It builds its bulky nest in the low mesquite or between the leaves of the yucca palm, and sometimes even in the cholla cactus. Their call note is a similar thin *chip* which they often repeat rapidly several times, as do, also, the other members of this group. They have, also, the same way of raising the crown feathers which gives the head a full, crest-like appearance.

The Albert's Towhee breed from Colorado to southeastern California; in southern Nevada, southwestern Utah, southern Arizona, and southwestern New Mexico.

This bird differs from the others chiefly in having black lores and chin. Mrs. Bailey says of it: "The cinna-

mon colored *áberti* is the largest of the plain towhees. It is said to be extremely shy. Major Bendire gives its alarm note as *huit huit*. At Phoenix it is common among the mesquites and cottonwoods. It nests in willow thickets, canebrake, low bushes, or mesquite."

GENUS OREOSPIZA : GREEN-TAILED TOWHEE.

Green-Tailed Towhee: *Oreospiza chlorúra*.

FAMILY—FINCHES, SPARROWS, ETC.

STILL another Towhee which differs in plumage from all the others is found on the western coast ranging from eastern Washington, central Oregon and Montana to southern California, southeastern New Mexico, and western Texas, wintering in the southern portion of its range.

This Green-tailed Towhee is about seven inches long and its upper parts are grayish, save the wings and tail which are a bright olive-green. The bright rufous crown of the head, white stripe from eye to bill, and white throat are distinctive markings which stand out as the bird forages on the ground among the bushes. The edges of the wings and under wing coverts are yellow, although they are less frequently seen. The female is similar but duller.

This bird which is unmistakably a Towhee, breeds as far south as the San Bernardino Mountain Range, California, and there may be seen in the underbrush, or in the low bushes, it being a bird of the high altitudes rather than the valleys.

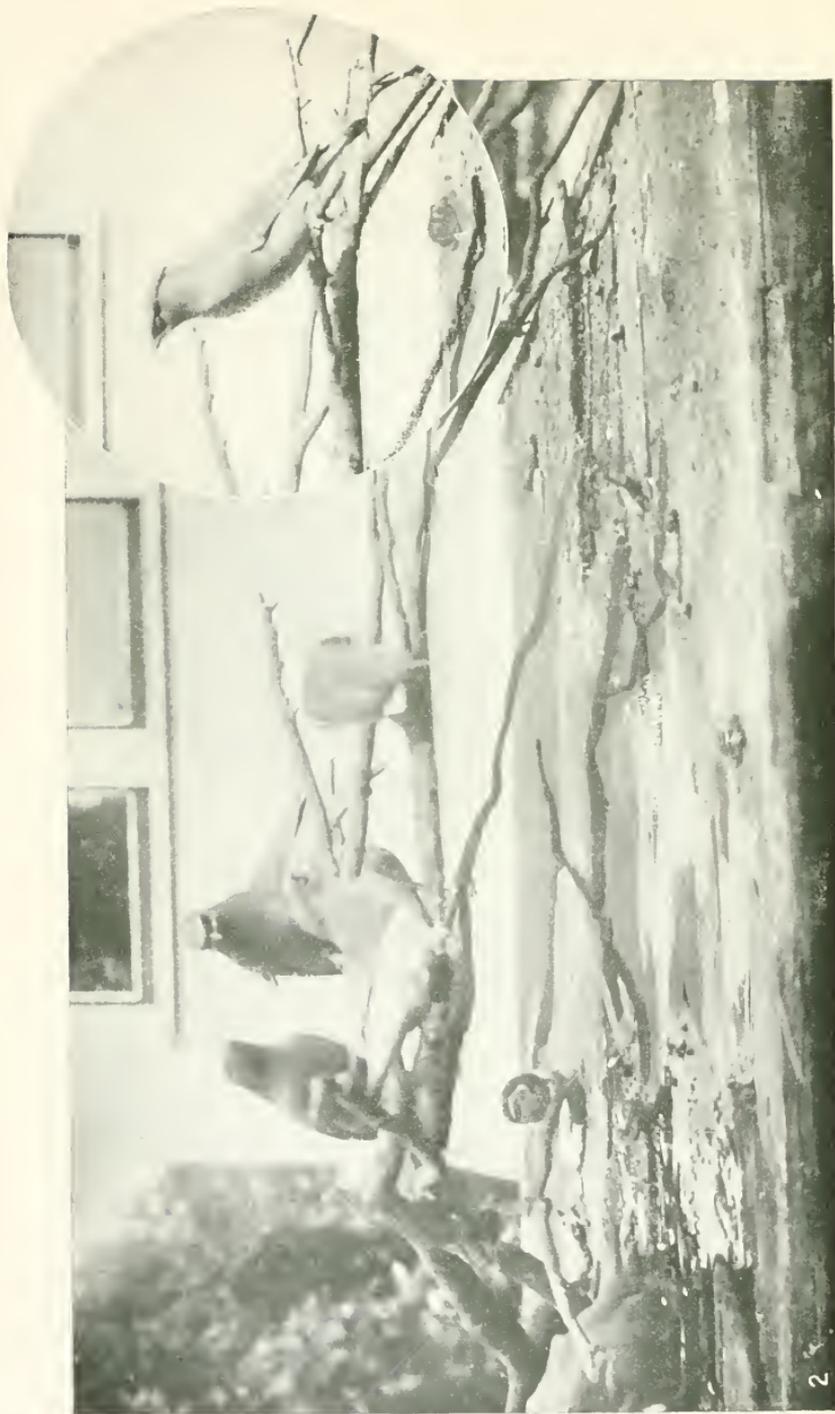
It is said to have a sweet song which is finch-like in quality and not unmusical. Mrs. Bailey gives the call as a soft *Mew, mew-ah-eep*.



1—YOUNG TOWHEE.

2—NEST OF TOWHEE.
TOWHEE.

3—ANTHONY'S
TOWHEE.



1 AND 2—CEDAR WAXWINGS.

Like the other members of this group, the birds nest on the ground, or a few feet from it, in the low bushes, using twigs for a foundation and finer material for the lining.

GENUS ZAMELODIA: BLACK-HEADED GROSBEAK.

Black-Headed Grosbeak: *Zamelodia melanocapala*.

FAMILY—FINCHES, SPARROWS, ETC.

WHILE the Rose-breasted Grosbeak lives in the eastern part of our country, on the western coast extending east to western North Dakota and northeastern Nebraska, slightly overlapping the range of its eastern cousin, is found a bird that is quite similar in size and habits, but entirely different in coloring.

This is the Black-headed Grosbeak, which is a summer resident, only. In California, where it is very common, it appears early in April and stays until September. One winter on February 15th, there appeared at my window-shelf a gorgeous male. This is the earliest record for these birds.

The male has a black head and neck which is sometimes striped back of the eye and middle of head with a buff line; the breast, broad collar, and rump are a bright cinnamon-orange which becomes almost as bright as the plumage of an Oriole in some cases; in others, however, the color is very pale and is probably that of an immature male, this western bird resembling its eastern cousin in the matter of attaining adult plumage. The tail is black with white corners, the back is black, as are also the wings which are relieved by white bars and markings.

The bill is horn colored and very big and clumsy. The female resembles the Rose-breasted having, however,

a buffy, rather than white, breast, and the under wing coverts yellow. The upper parts are much striped in browns, grays, and buffy with the crown of head strikingly striped in black and buff; light brown fine stripes sometimes mark the sides of breast.

The song of this western bird is exquisite. Florence Merriam Bailey says of the song of the Rose-breasted: "His song lacks the exquisite finish of the westerner, but is loud and musical and sung with a joyous swing." Of the Black-headed she writes: "At its best, given from a poplar or live-oak top in the leisure of a sunny afternoon, it is one of the most varied, exquisitely finished, and musical of bird songs. It has the swinging rhythm and clearness characteristic of Grosbeak songs, but is smooth and rounded, and its highest notes are dwelt on and trolled over with rare tenderness, repeated not as a Thrasher's notes are repeated, but with the enjoyment of an artist consciously perfecting his work."

Not only are these birds fond of nesting in thickets near water, but they also come into our yards and nest in our fruit trees. At this time, and from the moment of the birds' arrival, a loud musical strain is heard which seems to say, "*Sweet Mar-i-a*" as a closing phrase. These birds are among our earliest singing in the morning, and all day long they keep it up. When nesting duties are over I have heard a low song that consists of trills, whistles and warbles, all exquisitely done and reserved only for those whose ears are atune to every bird call. So bubbling over with joy is this charming westerner that he even sings as he broods the eggs. Again and again have I watched him take the nest at the departure of his demure mate, settle himself over the eggs, and break into a beautiful strain. In some cases it was almost a continuous performance. In a half hour's watching where the male was brooding, I recorded that he sang a short song every half minute. When the female

returned she found him singing and without stopping his joyous lay he flew away and she took the nest. Sometimes, also, the female sings as she broods.

The call of the young birds is the most musical of any single call note I know in the bird world. It is a liquid *Whé-o* and is given by the nestlings as they follow the parents about in the trees. Sometimes the female, also, gives this note. Ordinarily, however, the common note of the adults is a metallic *EEK*.

These Grosbeaks have been accused of eating cultivated fruit, especially figs and cherries. Because of their value in destroying insect enemies of fruit, Mr. McAtee recommends that the birds be not killed but that rather, in the case of a few trees, we cover them with netting. This netting can be procured for four cents a yard and with careful handling can be used ten, or more, years. An experiment carried on in Indiana proved that the fruit produced in a single season paid for the netting. In orchards too large to make the use of netting possible, the planting here and there of wild fruit-bearing trees and shrubs, by means of which almost complete protection to cultivated fruit can be assured, is recommended. The chief essential is that the decoy trees shall be early bearing species, for it is the universal testimony that almost all of the damage done is to early fruit. In order to protect early cultivated fruit, therefore, it is necessary to plant decoy fruit trees which will come into bearing at the same time as the earliest varieties. Such a fruit is the mulberry in some of its varieties. New American and Russian are recommended for California.

I can testify as to the fondness of the birds for these berries as a large tree in my own yard is the foraging ground for countless numbers, and many species. Elderberries are, also, great favorites and almost perpetual bearers.

We are told that the animal food of the Black-headed

consists almost wholly of injurious insects, being practically twice the bulk of the vegetable food, or more than four times that portion which is pilfered from man. The bird could not possibly select insects more prejudicial to the interests of western horticulture than the ones forming its natural food. These include the codling moth, cankerworms, flower-beetles, and such scale insects as the frosted, apricot, and black olive scales. In fact, these scale pests form two-fifths of the entire amount of this Grosbeak's food from April to September. For every quart of fruit eaten, more than three pints of black olive scales and more than a quart of flower beetles, besides a generous sprinkling of codling moth and cankerworms fall prey to this bird.

GENUS GUIRACA: BLUE GROSBEAK.

Blue Grosbeak: *Guiraca cærulea cærulea*.

FAMILY—FINCHES, SPARROWS, ETC.

WHILE less conspicuous in coloring than other Grosbeaks, this species is very attractive. The male is ultramarine with black wings and tail, the former having two chestnut wing bars. The female is brownish above and below, with a lighter throat, and in many ways resembles a female Cowbird, the massive bill being the only conspicuous feature that serves to distinguish the two.

The Blue Grosbeak is the smallest of his tribe and the most widely distributed in the United States. A similar western bird is known as the Western Blue Grosbeak (*G. c. lázula*) and breeds from Mexico to northern California, southern Nevada, central Colorado, northeastern Nebraska, and central Texas, while the eastern bird

breeds from the Gulf coast to southern Pennsylvania and southeastern Nebraska. The two races merge in eastern Texas, Oklahoma, and Kansas, both wintering below the United States.

During the nesting season the Blue Grosbeak is locally abundant in the southern and western part of its range, being in some places a familiar garden and orchard bird. But in the eastern part of the Mississippi Valley, and in the Atlantic States, it is shy, and rather rare. Here it is a frequenter of thickets of shrubs, weed-bordered streams, or brush-covered clearings, where the nest is placed in a low bush, or vine.

Chapman gives the usual note as a harsh *ptchick*, and the song as beautiful, though rather feeble, and although bearing a resemblance to that of the Rose-breasted, it also is somewhat like the Purple Finch song.

McAtee says that its pleasing song and engaging appearance have made it a favorite cage-bird among the southern creoles, who know it as the "blue pop."

Like the other Grosbeaks the bird is economically of great value to the farmer and deserves protection.

Grinnell says of these birds in California that they are common summer visitants to the interior valleys west of the Sierran divide, breeding chiefly within the Lower Sonoran zone. Common locally in the San Diegan district and quite generally throughout the San Joaquin-Sacramento basin from Onyx, Kern Co., north to Chico, Butte Co.

They are first seen in Los Angeles, and vicinity, in April. A few nests have been found in this part of the State but the birds are not so common as we would like. My only glimpse of them was along the river bottom near Riverside one springtime.

These birds seem especially fond of mustard fields and one may look for their nests in low bushes along the edge of a dry wash in a mustard field, or in low willow

thickets. They seem to like the dry mustard seeds that are so abundant in southern California.

GENUS PASSERINA: LAZULI BUNTING.

Lazuli Bunting: *Passerina amœna*.

FAMILY—FINCHES, SPARROWS, ETC.

THE Indigo Bunting is not seen on the Pacific Coast but in its place is a similar bird that is even handsomer. This bird breeds from western North Dakota south to southern California and southwestern Texas, wintering in Mexico.

It is a frequenter of brush-covered foothills and canyons, straying, however, as high as 7500 feet. The birds are rare enough in Los Angeles to make the sight of one a treat, indeed. As a male dashes past you and you behold the dazzlingly beautiful turquoise blue head and neck, the green-blue uppers, reddish-brown breast, and broad white wing bars, you pronounce him the most beautiful of birds and wish that his tribe was more abundant.

The adult female has soft brown uppers, with blue on the rump. The back is sometimes streaked, the under parts are a warm cream, and the wing bars are dingy. The young are similar but lack the blue rump, and often the chest and sides are streaked.

The male Lazuli has a pleasing little song which resembles that of the Indigo, and like that bird, is given frequently and with much vigor.

The nest is usually placed low in a bush, weed tangle, or tree near water, or moisture.

GENUS PASSERINA: PAINTED BUNTING: NONPAREIL.

Painted Bunting: *Passerina ciris*.

FAMILY—FINCHES, SPARROWS, ETC.

PROBABLY the brightest, most beautiful member of this family, if a combination of gay colors make beauty, is the Painted Bunting, or Nonpareil, a bird that is not as widely distributed as we might wish, being found as a summer resident from southern Kansas, central Arkansas, northern Mississippi, and southeastern North Carolina south to southeastern New Mexico, Texas, and the Gulf Coast. It is casual in southern Arizona and southern Illinois, wintering below the United States, although it has occasionally wintered in southern Louisiana and central Florida.

This gorgeous creature is about five and one-half inches long and is a bright red on its entire under parts; the head and back of neck are a purplish blue; back yellowish-green; the rump, tail, and wings are a dull red, the latter having a green patch. As in most cases where the male is so bright, the bird that does the brooding is modestly garbed. This female has the upper parts a bright olive green, the under parts white washed with greenish yellow; tail brownish margined with olive green. The young resemble the female.

In its manner of building its nest of grasses, fibers, and hair, and placing it in low bushes, it resembles the others of this genus.

The song reminds one of that of the Indigo bird, being, perhaps, shorter, but is given with a clear ring that is rather pleasing, especially when heard from a dry mesa on a hot day.

Mr. Maynard says of the birds that spend the winter

in Florida that they are shy and retiring, seldom appearing in the open, but remaining in the dense, thorny undergrowth which covers all waste places in Florida, especially if the soil has been cultivated. Mrs. Bailey reports the Nonpareils as abundant on the mesquite prairies of southern Texas. She also reports these birds along the Pecos River in southern New Mexico, where all day long their loud bright songs were heard, even on the hottest days.

In the west we have also the Varied Bunting (*P. v. versicolor*) which is found in the valley of the Lower Rio Grande in Texas. The male has the forehead and rump a bright purplish-blue; back of neck is a bright red which becomes a purplish red on the back. The under parts are a plum red which become a plum purple on the belly. The female is a dull bird in browns, olive, with edgings of blue on wings and tail, and with whitish under parts.

In southern Arizona, and northwestern Mexico, a similar bird is known as the Beautiful Bunting (*P. v. púlchra*).

GENUS PIRANGA.

FAMILY—TANAGARIDÆ. TANAGERS.

THE Tanagers belong to a family of bright-colored tropical birds, only a few species of which stray into America and that only during the summer. They are so closely related to the Finches—having heavy bills—that it is not clear to which family certain genera should be referred. The males are gorgeously garbed while the females are somber of plumage, her protective coloration as she broods the eggs surrounded by leaves being perfect.

While as a race the birds are weak of voice, the best-known ones in this country are pleasing singers that add much to our summer woodlands, making us wish that their stay might be prolonged.

The bird found commonly throughout the east and middle west is the Scarlet Tanager, which is not found west of the Rockies; the Western, or Louisiana, is rarely found east of these high mountains; while the Summer Tanager (*Piranga rubra rubra*) is a dweller of the southeastern States, breeding from southeastern Nebraska, southern Iowa, southeastern Wisconsin, central Indiana, southern Ohio, Maryland and Delaware south to northeastern Mexico and central Florida; wintering south of this country.

A subspecies known as the Cooper's Tanager (*P. r. coóperi*) is found in the southwest, breeding from southeastern California, southern Nevada, central Arizona, and northeastern New Mexico, south.

Still another western species is found in northwestern Arizona, northeastern New Mexico, and western Texas, south, and is called the Hepatic Tanager (*Piranga hepatica*). The gray cheeks of this bird distinguish it from the Cooper, the back also having more gray and the under parts less of the rose pink than *coóperi*.

GENUS PIRANGA: WESTERN TAN- AGER.

Western Tanager: *Piranga ludoviciana*.

FAMILY—TANAGERS.

THE Western Tanager is similar to his red cousin in everything but plumage. To my mind he is even handsomer, though quite different. His head and neck are a beautiful bright red; fore back, tail and wings black, the latter with two yellowish bars; the rump and under parts are a bright lemon yellow. The female is similar to the eastern one save that she has wing bars. The male in winter plumage resembles the female save that he may have some red on the head and the back more yellow. The young resemble the female. The length is about seven inches.

These birds, which are also known as Crimson-headed or Louisiana, breed from southwestern South Dakota and the eastern base of the Rocky Mountains to the Pacific Coast and north of the United States, wintering southward from central Mexico, and being sometimes seen in the New England States during migration.

They like the high altitudes, nestling in firs, pines, and live oaks from ten to fifty feet from the ground, and going as high in the mountains as ten thousand feet.

The nest, like that of the eastern bird, is shallow and placed near the end of the branch. The female, only,

broods the eggs but I have seen the male come to the nest and feed her. She also leaves the nest and forages in the tree-tops.

One summer when I camped in the Sierra Madre Mountains, I was awakened every morning by the song of the Tanager. They are migrants, only, in the valleys but sometimes they sing. Always when I hear them I am reminded of the solitude of the mountains, the big trees, and the rushing water.

The song is sung deliberately, two notes, a pause, then two more, there being usually three of these groups with a single note for the end. *Pret-ty cher-rie, cher-rie, cher* the bird sings in accents far sweeter than one can describe. As in the case of the Scarlet Tanager, one can see a resemblance to the song of the Grosbeak and the Robin, although one need never mistake one for the other. The call note is a *pée-tic* and *tu-wéep*, quite different from the call of the scarlet cousin.

These gorgeous birds pass through Los Angeles and vicinity in April or May, and they nearly always pay me a call. The mulberry tree was the camping ground of three splendid males this last spring and they sang as they foraged. The bird table, loaded with bread, suet, and oranges also attracted them. There were no females about and I believe that the males come on ahead.

One of these males fell into my keeping on the second of May, having been picked up in the early morning. One wing was injured so that it could not fly. When placed in my bird bungalow it hopped about on the perch and was not particularly shy. It ate halved oranges and mulberries and a food that most birds like and thrive on—the yolk of a hard-boiled egg and a small mealy potato mashed together, with a pinch of red pepper. For two weeks we had to keep him in captivity and then his wing was well and he flew away to his canyon home.

Henshaw tells us that the Western Tanager was discovered in Idaho by Lewis and Clark in 1806, thus having been known more more than one hundred years.

These birds have been accused of destroying cherries and strawberries and of doing great damage when descending upon the fruit in great numbers during the spring migration. To offset this it is a great insect eater and for the greater part of its stay with us is helping rid the country of these noxious species. The planting of mulberries, elderberries, and other berry-bearing trees near the orchard will help save the cultivated fruit.

FAMILY—HIRUNDINIDÆ. SWALLOWS.

FEW of our birds have been more woven into song and story than has the gentle Swallow. Its incessant circling flight is the epitome of grace, and well might inspire the poet's muse. Even to more prosaic mortals there is something inspirational in the movements of these birds. With the coming of the warm days of spring they appear in large flocks, flying in their graceful, swift way through the air, reminding one that warmer days are at hand. They are summer birds, only, and when nesting duties are over, they again assemble in large flocks and wing their way to warmer climes.

While to the singer and poet a Swallow is a Swallow, scientists tell us that there are nine species found north of Mexico. While differing somewhat in plumage, range, and manner of nest-building, they are all unmistakably of the same tribe, and easy of identification. The long wings, short, flat bill which is broad at the base and opens wide, enabling them to catch insects as they skim through the air; the small, weak feet, proclaim them gleaners of the air. Surely that is their mission in life—to rid the air of insect life. One cannot imagine the big, clumsy Thrashers skimming over the water and marshes, or circling far overhead; neither can we imagine the Swallows probing in the soil for grubs. Each bird has its place in Nature, and it is the province of the Swallows to guard the air.

H. W. Henshaw, in Circular No. 56, says of the economic value of these birds:

“From the standpoint of the farmer and orchardist,

perhaps no birds more useful than the Swallows exist. They have been described as the light cavalry of the avian army. Specially adapted for flight and unexcelled in aerial evolutions, they have few rivals in the art of capturing insects in midair. They eat nothing of value to man except a few predaceous wasps and bugs, and in return for their services in destroying vast numbers of noxious insects ask only for harborage and protection. It is to the fact that they capture their prey on the wing that their peculiar value to the cotton grower is due. Orioles do royal service in catching weevils on the bolls; and Blackbirds, Wrens, Flycatchers, and others contribute to the good work; but when Swallows are migrating over the cotton fields they find the weevils flying in the open and wage active war against them. As many as forty-seven weevils have been found in the stomach of a single Cliff Swallow."

GENUS PROGNE: PURPLE MARTIN.

Purple Martin: *Progne subis subis*.

FAMILY—SWALLOWS.

THE largest member of the Swallow family is the Purple Martin, which is found in more or less abundance in most parts of the United States, save the southern portion of the Pacific Coast, where a similar bird is known as the Western Martin.

It is about eight inches long, with a sixteen-inch spread of wings which gives it a larger appearance. The male is a rich, deep purplish blue-black, with strong violet reflections, the wings and tail being a dull brownish-black; the tail is forked, and the eyes are full and dark. The female and young are black above, but less lustrous

than the male; under parts brownish-gray, more or less tipped with white.

The birds are summer residents, only, and have taken kindly to civilization, leaving their hollow tree and cave-homes to occupy birdhouses placed for them by mankind. In the far east they are not so abundant as formerly, the English Sparrows being largely responsible for this. And, too, the birds' habit of congregating in large flocks as they move southward has been the means of the death of thousands of them. T. Gilbert Pearson has estimated that these flocks sometimes number one hundred thousand.

They prefer a grove near human habitation to roost in and by their continuous chattering and fluttering during the early part of the night sometimes prejudice the neighbors against them so that they shoot into the roosting flock. One account is given of the birds choosing the grounds of a North Carolina hotel, where the proprietor and his friends fired into the trees and continued to shoot until the ground was literally covered with dead and dying birds, it being estimated that from eight to fifteen thousand Martins were killed.

We regard with satisfaction the fact that these men were arrested by the State Audubon Society, convicted, and fined in the local court. That did not, however, bring back the life of these useful birds that were so wantonly slain.

These Martins are known to rid the air of mosquitoes, flies, moths, and other noxious insects. Dr. Packard reports having found one of the compartments of a Martin house literally packed with the dried remains of the little yellow-and-black squash beetles. Prof. Aughey, of Nebraska, found that ten of these birds in his State had eaten 265 locusts and 161 other insects. Surely, from an economic standpoint, if no other, it is poor policy to allow them to be destroyed.

Dawson records these birds as rare in Washington except in the largest cities, where they dwell in the busiest districts.

GENUS PROGNE: WESTERN MARTIN.

Western Martin: Progne subis hesperia.

FAMILY—SWALLOWS.

IN THE Pacific Coast region, breeding from British Columbia, south (its winter home unknown), is found the Western Martin whose male is indistinguishable from the Purple, but whose female has the light gray of forehead extending back into the crown; back and rump edged with grayish; bend of wing and under coverts mottled with white; abdomen and under tail coverts, white.

These western birds have not taken kindly to civilization for, although recorded as nesting in crevices in buildings in southern California, for the most part they are dwellers in the timbered regions of the mountains and higher foothills. We of the west cannot help but regret that they have not taken kindly to us. We would gladly put out boxes for them and in most places there are no English Sparrows to disturb them.

Martins have the nearest approach to a song of any of the family. Wilson says of it: "His usual note *peuo*, *peuo*, *peuo*, is loud and musical, but is frequently succeeded by others more low and guttural."

The birds in their natural homes select holes in trees for nesting sites, as did formerly their eastern cousins.

GENUS PETROCHELIDON : CLIFF
SWALLOW.

Cliff Swallow: *Petrochelidon lunifrons lunifrons*.

FAMILY—SWALLOWS.

ONE of the most common members of this family is the Cliff Swallow, which is found during the summer months nearly all over the United States, except Florida and the Rio Grande Valley.

It is about six inches long, with wings four and one-half inches in length. The crown of head, back, and patch on chest are a glossy blue-black; the forehead may be white, buffy, or brown; the throat, collar, and rump are chestnut; sides brown and rest of under parts chestnut. The tail is notched, but not deeply forked like that of the Barn Swallow. The *chestnut* rump is helpful in identification.

The birds build wonderful pouch-shaped mud nests which before the coming of man they plastered on walls, or cliffs. Now, although they still build on cliffs, they are also fond of the eaves of barns, outbuildings, and houses. They are gregarious birds, building in large colonies which, from the bird student's viewpoint, are most unsatisfactory to study, since they all look alike and are forever whisking in and out of the nesting colony, until one becomes almost dizzy trying to watch one bird and know to a certainty that it goes only to one particular mud pouch. Low twittering notes are kept up by these Swallows as they fly back and forth.

It is a pretty sight to see them building their nests. When a suitable place has been selected—and if unmolested they yearly return to the same place—a dripping hydrant, or other muddy place, is located, and a constant stream of twittering birds passes between the

nesting-site and the moist earth. Poising beside the wet place, with their raised wings supporting them like huge butterflies, and the short tail tipped upward, they fill their bills with mud and are away. A ring of pellets is cemented to the structure chosen for the nest, and the long gourd affair, its round opening smaller than the base, is built, a pellet at a time, and finished with a feather, or grass, lining.

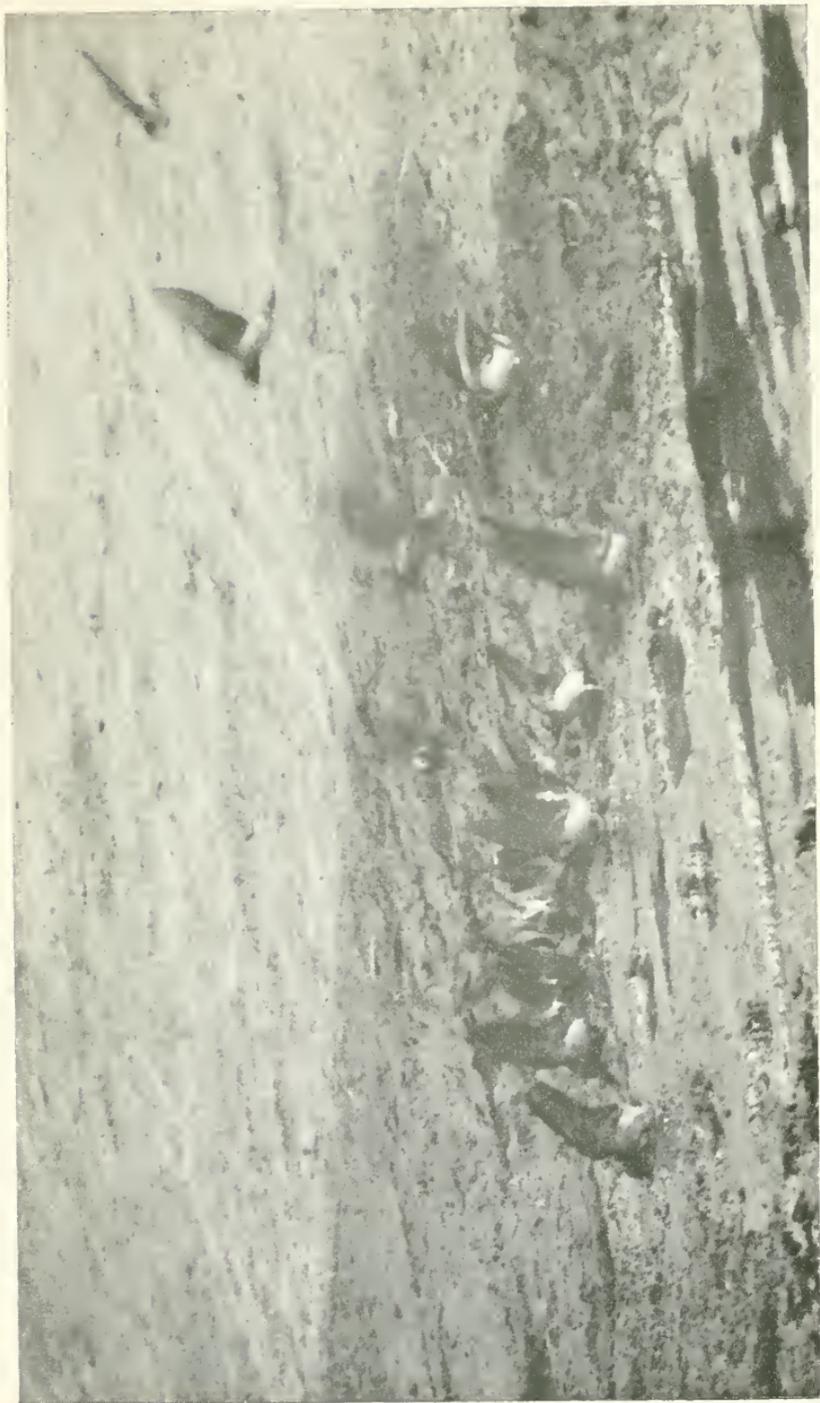
It is, indeed, a wonderful nest and it seems a pity after so much labor expended that people often destroy them just because the birds are noisy, soil the side of the building, and sometimes harbor parasites. We are assured by the Biological Survey that these parasites thrive only on the birds, not in human habitations, albeit they greatly resemble those pests of beds.

The young are dear little fellows whose bright black eyes watch eagerly, from their round mud doorway, the passing of the old birds; squealing jubilantly when a bird pauses to feed them. They actually act as if they knew their parents.

I once had one of these baby Cliff Swallows brought to me and was able to raise it. It thrived on the flies we caught, learning to snap them up for itself before it finally flew away and we saw it no more.

An old bird, with an injured wing, which I also had, showed great intelligence, perching on my finger and from there snapping the flies which we searched house and yard to supply. It evidently realized that it could not fly, and was careful to only reach as far as it could for the food, without using its wings. It was the gentlest and most intelligent captive I have ever had.

Wilson says of them: "These birds are easily tamed, and soon become exceedingly gentle and familiar. I have frequently kept them in my room for several days at a time, where they employed themselves in catching flies, picking them from my clothes, hair, etc., calling



CLIFF SWALLOWS GATHER MUD FOR NESTS.



1—WEEK-OLD CLIFF SWALLOWS. 2—IMMATURE CLIFF SWALLOW. 3—NESTING HOLES OF BANK SWALLOWS.

out occasionally as they observed some of their old companions passing the windows."

Subspecies found in the west are the Lesser Cliff Swallow (*P. l. tachina*) which breeds in Texas and the Rio Grande Valley; and the Mexican Cliff (*P. l. melano-gastra*) found breeding in southern Arizona. It is smaller than *lunifrons* and has the forehead *chestnut*, like throat and side of head.

GENUS HIRUNDO: BARN SWALLOW.

Barn Swallow: *Hirundo erythrogastra*.

FAMILY—SWALLOWS.

THE Barn Swallow is another member of the family which is found widely distributed, being a summer resident both east and west, as well as going far north of the United States.

They are about seven inches long and have deeply-forked tails; glossy black uppers which glint in greens and blues; rich brown under parts which are deeper on throat and paler on under wing coverts. The forehead is a dark brown; a collar of black partially circles the throat, and white markings on all but the middle tail feathers complete a handsome costume.

The birds have the swift, graceful flight of the family; now skimming low over lake, marsh, or ocean beach, or flying through the air at a great height; dropping, turning with rapid wing-beat, always graceful and never colliding as less expert aviators would do. As you watch them you feel that the proverbial busy bee is lazy compared to the industry of these birds.

Besides the difference in plumage between the Cliff and Barn Swallows, their nesting habits are dissimilar in that the latter builds an *open nest*. They are fond of rafters and cornices in barns, where they place their mud

nests, which are also painstakingly made of mud pellets, interspersed with straws. The walls of these open nests are often an inch thick, and so lined with feathers as to almost conceal the eggs.

West of the Rockies the Barn Swallows are not so common as in many of the eastern States. They have taken a queer way of going to caves and crevices, rather than barns, to raise their young. In this respect they seem to have changed places with the *Cliff Swallows* which are very common about human habitations rather than the places which have given them their name. If the cliffs were the original nesting sites of the Barn Swallows, they have failed to avail themselves of the buildings which the advancement of civilization has brought.

The common call of these birds is a soft *witt*, oft repeated, while the alarm note is a harsh *t'r'r'r*. Nuttall says that "their song is very sprightly, and sometimes a good while continued. Some of these sounds seem like *'t'le 't'le 't'letalit*, uttered with rapidity and great animation. A while before their departure, they are observed skimming along the rivers and ponds after insects in great numbers, till the approach of sunset, when they assemble to roost in the reeds."

GENUS IRIDOPROCNE: TREE SWALLOW.

Tree Swallow: *Iridoprocne bicolor*.

FAMILY—SWALLOWS.

THE Tree, or White-bellied Swallow, one of the handsomest of the family, is found in North America from the limit of trees, south to southern California, Colorado, Kansas, Missouri, and Virginia; wintering from central California, southern Texas, southern parts of the Gulf

States, and southeastern North Carolina, south over a greater part of Mexico.

It is nearly six inches long and twelve inches from tip to tip of wing, the upper parts being a glossy greenish blue, tail forked, and under parts white.

They are among our earliest arrivals and also stay later than most of their family, even spending the winter in favored localities.

They nest in colonies, selecting holes in hollow trees, openings in houses, as well as sometimes preëmpting the nesting boxes put up for the Martins. The nest hole is lined with dry grasses and feathers, the latter often concealing the pure white eggs. Two broods are raised.

As they sail through the air in their endless flight they keep up a chatter note that is sometimes low and guttural, and at other times harsh and sharp, but always unmistakably Swallow language.

One flock which I watched came year after year to a southern California ranch which was near a stream bordered by willows and low growths. Here they made their nests in the hollow trees and other available places. A knot-hole in the gable of the house was a favorite site. They went about their affairs unmindful of the human family, and the latter, being bird lovers, rejoiced to have them about, not only for their beauty, but because they knew the great good they were doing in ridding the ranch of insect life.

GENUS TACHYGINETA: NORTHERN VIOLET-GREEN SWALLOW.

Northern Swallow: *Tachycineta thalassina thalassina*.

FAMILY—SWALLOW.

THE very handsomest of all the Swallows, the Violet-green, lives in western North America, breeding from

Alaska and the far north south along the entire Pacific coast, extending east to South Dakota and western Nebraska; migrating through western Texas and wintering in Mexico and farther south.

It is about five and one-half inches long and has the head, back, and fore wings a beautiful bronzy-green which show purple lights. The wings, tail, and narrow strip on nape are a rich violet-purple which change in the sunlight; the white under parts extend up on to the cheeks and over the bright black eyes. This white also extends up from the belly and nearly meets on the rump. The tail is deeply indented. A dead member of this family, which was probably a passing migrant, was once found in the foothills between Pasadena and Los Angeles. As I examined it, watching the play of colors—violets, greens, bronze, and purple, set off with the pure white, I thought it one of the handsomest birds I had ever seen. Would that we might induce them to become as tame and abundant as the Cliff Swallows.

However, most people must be content to see them as passing migrants, since they prefer the oak regions of the mountains to raise their families, using holes and crevices as nesting sites. Willett reports having found them breeding commonly in the oak regions of Santa Barbara County and in the San Jacinto Valley, Riverside County, as well as in the foothills of Ventura County, all of southern California.

Dawson makes us quite envious when he tells us that in Washington they are forsaking the granite and lava cliffs, where they once nested in holes and crevices, and are claiming protection of man, already becoming common in the cities. "South Tacoma, being nearest to their old oak nurseries, is quite given over to them. It is a pretty sight on a sunny day in April to see them fluttering about the cottages, inspecting knotholes and recessed gables or, in default of such conveniences, daintily voic-

ing their disapproval of such neglect on the part of humans.”

One July a bird enthusiast watched a nest-hole of these birds in the Sierra Madre Mountains, just above Pasadena, California.

GENUS RIPARIA : BANK SWALLOW.

Bank Swallow: *Ripária ripária*.

FAMILY—SWALLOWS.

THE Bank Swallow is the smallest of the tribe, being only about five inches long. It is a soft brownish gray above, and white beneath save for a dark band across the chest. The tail is deeply indented, but not forked as in the case of the Barn Swallow.

These attractive birds range over the greater part of the United States, breeding from near the tree limit of Northern Alaska and northern Ungava south to southern California, Arizona, Texas, Louisiana, and Virginia, migrating through Mexico and wintering farther south.

Both east and west they build in suitable locations along streams but are not so abundant as some others of the family.

Their habit of building deep holes in banks for their nests is the most interesting thing about them, and has caused them to be sometimes called Sand Martins. Like other Swallows they are gregarious and dig their nesting holes side by side, sometimes perforating a bank with them. It is hard to understand just how a bird with so small and seemingly weak a bill, can dig a straight, round tunnel that is often three or four feet long, enlarging the far end and lining it with grasses for a nest. Here, again, the work of the busy bee is outclassed.

We are told that they make this long hole with their

bills, bringing out the surplus dirt with their mouths, a performance which seems hardly credible.

Having found a suitable sand-bank, they dig the holes near the top of cliff and return year after year to the same place, the young joining the old, thus making quite a colony.

These birds are rather more quiet and timid than most of their tribe, but because of their habit of digging a nest with their bills in a clay, or clay-and-sandy bank, are extremely interesting and well worth watching, should you be given the opportunity.

GENUS BOMBYCILLA: ROUGH- WINGED SWALLOW.

Rough-Winged Swallow: *Stelgidópteryx serripénnis*.

FAMILY—SWALLOWS.

A BIRD somewhat resembling the Bank Swallow is known as the Rough-winged because of the recurved hooks on the edge of the outer primary—a saw-toothed effect found in the male, only, although the wing of the female is roughened. It is about five and one-half inches long and of a dull brownish-gray plumage above and below, save for the belly and under tail coverts, which are white.

The Rough-winged breeds from British Columbia, Montana, North Dakota, Minnesota, southern Wisconsin, Ontario, southern New York, central western Massachusetts, and Connecticut south to southern United States from southern California to northern Florida; wintering from central Mexico, south.

These birds seem to be somewhat erratic in their nesting habits, sometimes making tunnels in banks, but as frequently selecting crevices in cliffs, crannies in bridges,

etc. They nest singly, or a few together, rather than in large colonies, like the Bank Swallows, the birds they most nearly resemble.

When nesting duties are over they congregate in large flocks and leisurely fly to their southern winter homes.

GENUS BOMBYCILLA: BOHEMIAN
WAXWING.Bohemian Waxwing: *Bombycilla garrula*.

FAMILY—BOMBYCILLIDÆ: WAXWINGS.

THIS beautiful bird is a winter visitor, only, in certain portions of the United States, it preferring the cold north as its breeding home. However, in the winter time they come south irregularly to eastern California, Colorado, Kansas, southern Illinois, Indiana, Ohio, Pennsylvania, and Connecticut; casual in Arizona.

They are about eight inches long and are garbed in a soft fawn color which becomes grayer on rump and flanks, and is washed with yellowish on the middle of belly. The chin, lores, and a streak which extends through the eyes and under the tall brown crest, are a velvety black; the forehead, cheeks, and under tail coverts are rufous; the upper tail coverts, wings and tail are a slate gray, the latter tipped with a deep yellow band, the former having some yellow and white markings, and red, wax-like, tips which have given the bird its name.

In habits it is quite like its cousin, the Cedar Waxwing, a well-known species of this country. The latter bird differs in plumage in lacking the rufous forehead, cheeks, and rump, and the yellow and white markings on the wing.

GENUS BOMBYCILLA : CEDAR WAX-
WING.

Cedar Waxwing: *Bombycilla cedrorum*.

FAMILY—WAXWINGS.

AMONG the few birds which are alike wherever found—both east and west—are the Cedar Waxwings, also called Cedar Birds, because of their fondness for cedar berries; and Cherry Birds, because they have the good judgment to like this luscious fruit.

While many of these birds breed north of our country, others breed south to southern Oregon, northern New Mexico, Kansas, northern Arkansas, and North Carolina, wintering throughout nearly all of the United States. Their presence, in their winter homes at least, is variable; sometimes they will be about in immense flocks, and again hardly a bird will be seen in a locality which the year before they had frequented.

They are extremely gregarious, going about in small, or large, very compact flock, flying evenly together, sometimes suddenly wheeling and descending to some tree, or as suddenly halting their rapid flight and dropping down to forage in the tree-tops.

They are especially fond of berries, those of the pepper tree being the attraction in southern California, but they are also flycatchers, darting out from a bare limb, flycatcher-fashion, after the unsuspecting insect and returning to the place from which they started.

In plumage and gentle manners few species excel this one. Though modest in coloring, the tones are so exquisitely soft and the form is so graceful, that one easily falls in love with the bird.

They are somewhat smaller than their Bohemian cousin, being seven or seven and one-half inches long.

The prevailing color is rich fawn which becomes yellowish on the flanks; the wing quills and tail are blackish, the latter banded with deep yellow. The birds have a long pointed crest, black chins and black streaks that pass through the eyes and add to their beauty. But the thing that has given them the name is the red wax-like appendages on the wings, and rarely, also, the tail. When closed these red tips show conspicuously near the end of the wing. Sometimes they are lacking, which is thought to indicate immaturity, although the young birds have been known to have them. The very young have streaked breasts.

In its eastern range it is a fairly common resident, building its nest in orchards and shade trees, sometimes as high as fifty feet. The nest is a bulky affair, made of string (of which the birds seem very fond), hair, twigs, leaves, fibers, rootlets, and various trash.

The female does the building and brooding, although the male is solicitous and accompanies her on her building expeditions, and sometimes making a pretense of helping. The young are exemplary little beauties, modest in coloring like their parents, and like them with manners above reproach. Who ever heard of a Cedar Waxwing losing his, or her, temper, showing any haste—save in flight—or in any way ruffling, or soiling, its plumage?

The one thing which the bird lacks is a voice. The only note I have ever heard, and I find no record of a song, is a soft, peevish sighing, or squealing, sound which reminds me of the wind blowing through the trees. It is a monotonous note which is reiterated so persistently by the flock of birds that one is tempted to wish that these beauties were entirely voiceless. This sighing note, or "hushed whistle," is quite out of keeping with the bird's erect, soldier-like carriage.

In southern California the Waxwings are winter



1—PHAINOPEPLA. 2—YOUNG CALIFORNIA SHRIKES.



SHARP-SHINNED HAWK AND SHRIKE.

visitors, only, staying as late as June when they go north of the state to raise their young, Oregon being their southern breeding point.

They are fond of the tall eucalyptus trees and often their presence among the blossoms is detected by their incessant note when it is impossible to see them. But the food that the birds seem fondest of in the south is the berry of the pepper trees. All winter long they will stay about in big flocks where these trees grow, often swinging out on a frail branch with head down in an effort to secure the red berry. While not particularly shy, if you chance to walk rapidly under a tree where they are feeding, they are apt to fly quickly out in a compact flock and whiz away, *sighing* as they go, oftentimes circling in the air and coming back to the same tree to complete their repast.

One interesting thing about the pepper-berry diet is that the hard inside of the pellet is not digestible and the birds have a way of disgorging it once the softer outside has been absorbed. Sometimes these pellets descend like raindrops from my eucalyptus trees whither the birds have gone to rest after their feeding. And, too, small pepper trees have sprung up beneath it, living monuments to the Cedar Birds. Sometimes the walks under eucalyptus trees are red with pepper berries and the uninformed might well wonder how they came there when none of the trees are in sight.

These birds have a reputation of being very gallant and solicitous for each other's welfare, such as a row of young passing a cherry, or worm, along from bill to bill and back along the line—none of them eating it.

One spring I witnessed a pretty sight in a tall sycamore tree where the birds were alternately flying out, flycatcher fashion, after insects, and nibbling from the seed-balls on the tree. One bird pulled off a ball which was probably three-quarters of an inch in diameter, and

holding it in his bill hopped toward another bird on the same branch—presumably a female—and offered it to her. She nibbled from the opposite side, then each bird hopped back a few steps, then toward each other again, and the female took from the ball which the male held all this time. For several minutes they kept up this dainty exhibition.

Although these birds do some harm by eating cultivated fruit, they also do much good by eating noxious insects, especially scales and the dreaded elm beetle. Prof. Forbes tells us that he estimates that thirty Cedar Waxwings will destroy 90,000 canker worms in a month, which calculation Forbush believes to be far within bounds.

Surely we who know these beautiful birds would protect them for sentimental reasons, but we are glad to know that economically they warrant protection.

GENUS PHAINOPEPLA: SILKY FLY-
CATCHERS.

Phainopepla: *Phainopepla nitens*.

FAMILY—SILKY FLYCATCHERS.

ORIGINALLY this bird was placed in the family with the Waxwings but the latest classification of the A. O. U. places it in a family by itself, which seems quite proper since there is little resemblance between the two; in fact, none, save the crest, so far as plumage goes.

To me this Phainopepla, or Silky Flycatcher as it is sometimes called, is the most dignified and aristocratic of our birds. He is about seven and one-half inches long and is very slender, with a rather thin crest that at times tips forward. His plumage is the glossiest and shiniest of blacks, the only relief being a bright red eye, and white wing patches which, however, show only in flight. The female has the crest but is a soft, inconspicuous gray with wing patches slightly lighter.

It is to be regretted that this most interesting species has so limited a range, being found only from central California, southern Utah, and southwestern Texas, south; wintering from southern California, southward.

These birds are most abundant in the desert country of the southwest, often gathering in large bands to feast upon the juniper berries of which they are fond. They do not, however, restrict themselves to desert regions, being common summer residents of Pasadena and portions of Los Angeles that border the Arroyo. They are not at all shy, even nesting in the dooryards and coming

daily to eat the elderberries, and mulberries, as well as peppers, when the others are lacking.

An injured bird which I kept in my bird bungalow for two weeks before he was able to fly, became quite tame, and on several occasions sang to me his low warbling song as I have never heard one of them sing. Perhaps it was excitement that caused him to sing but certainly the song was more varied than usual.

Besides this low, warbling song which the male sings frequently from telephone wire, or other high place, there is a guttural, rather unpleasant *scrat* note which is used in alarm and by the nestlings, and a beautiful single liquid note that greatly resembles one note of the Robin.

Though these birds are fond of berries of various kinds they are also fond of catching insects on the wing, especially towards night. Their manner of doing this is to fly from their perch and zig-zag through the air, often at quite a height, keeping up this irregular, broken flight until one wonders if the bird has lost its senses. Often, too, they fly through the air in circles and in approaching the nesting tree very often come flying rapidly toward it, then dive downward in a large circle and light beside the nest, or directly on it. In leaving the nest they fly out and sometimes straight up before they start on their course. In a straight flight the bird rather bobs along as its wings are short and tail long.

We find in most species that the female is the home builder and incubator of the eggs, and that she is given a dull, inconspicuous attire which blends with her habitat. It would seem in the case of the Phainopepla almost as if Nature had made a mistake and that the female might as well have been a glossy black like her mate, since he does most of the nest building, and fully his share of brooding. It really does seem a little inconsistent that this jaunty, dapper fellow should perform menial tasks. And yet, one can plainly see that it is his delight. Again

and again have I seen the female try to "lend-a-hand" at the nest-building only to be driven away by her mate. Usually she persisted and succeeded in helping but it was generally under protest.

However, I have known Madam to pay her spouse back by leaving him on the eggs for over an hour, and that, too, on a very hot day. It was amusing to see him fidget and turn, once or twice leaving the eggs for a few minutes, but always coming patiently back until his mate returned.

Near my home the birds are especially fond of pepper trees as nesting sites, but oaks, elder, sycamores, and eucalyptus are also used, the nest being from ten to twenty-five feet from the ground.

A horizontal crotch is usually selected, the nest being a shallow, saucer-shaped one made of fine gray material, mostly plant fibers. It is most interesting to see the male turn and twist in the nest as he shapes it. Quite often he pauses in this process to sing his warbling song, which is often so low that only one near at hand can hear, and perhaps then one might not fully comprehend it did not the swelling throat proclaim it.

The eggs hatch in two weeks and the young are fed visible food at first. I have watched one of the adults zig-zag through the air and go directly to the young and feed; also I have seen the blue berries of the Nightshade fed newly-hatched nestlings.

The young are replicas of the female, being gray with pointed crests. They are fairly noisy, giving the harsh *scrat* note. Some young birds never return to the nest once they have left it, but these nestlings leave the nest and scramble about the tree, then return to rest, and for the night. They are about two weeks old when they begin to venture into the home tree, and wonderfully cunning little chaps they are. They stay about in the trees until able to fly and so are fairly safe from cat

ravages, although I have known these felines to take the newly-hatched birds.

Sometimes the Mockingbirds resent the coming of the Phainopepla to their neighborhood and are most disagreeable to them, and although these birds are by no means docile themselves, twitching their long tails, lowering their crests, and calling vigorously in protest, they cannot withstand the Mockers, once those birds have decided that they did not care to have them about. I have known the Phainopeps to move the material of their nest into another tree, and from that one to still another, and then finally to leave the neighborhood because of bothersome Mockingbirds.

I believe that two broods are often raised and by the middle of August the birds are beginning to disappear, to be seen no more until the last of April, or first of May. One winter, however, one of these males visited my yard during January.

The males usually appear before the females and it is a pretty sight to see three or four of these beauties circling about each other, and even coming to blows, in an effort to gain favor with a certain gray bit of feathers. Sometimes after the nest is completed, or even when there are young, an extra male will appear on the scene. At such times the owner charges him vigorously and sometimes a duel is fought in the air, the intruder always being vanquished and departing to new fields.

Stately, dignified, beautiful, and vivacious—these Silky Flycatchers are ever welcome visitors. Occasionally a bird stays about all winter. Such was the case in my own garden when a male first appeared in January, 1920, and for months came daily to my bird bath and to feast on the pepper berries. For a day or two in January a gray female was about. This male was a rusty black, especially his body, which is thought by some scientists to be an arrested plumage, rather than a winter one.

GENUS LANIUS.

FAMILY—LANIIDÆ: SHRIKES.

OUR Shrikes, or Butcher-birds, though not listed as birds of prey, have large, powerful, hooked bills, not unlike that of a Hawk. Though they lack the talons with which to hold their prey as they pull it to pieces, they have a way of driving their catch, be it mouse, or large insect, into a crevice or fork of a tree, and in that way securing it. If the catch is small, yet too large to swallow, it is held under the foot while picked apart.

The favorite way of sighting its prey is to perch on some telephone pole, wire, post, or bare limb, rather than by hovering in the air as do the true birds of prey. When a tempting tidbit is sighted the bird flies down, seizes it in its bill, and returns to its outlook. Nearly always in open, treeless country these birds are to be seen patiently watching. Oftentimes they are the one bit of bird life in the landscape. Their wings are short, and their flight, though straight and unwavering, is seldom long, or high in the air. They seem rather to guard the ground, diving down from their perch to a few feet from the earth before they start on their flight.

One habit they all have when food is abundant, of storing their catch for future consumption on thorns, sharp twigs, or barbs of wire fences. Seldom do the birds eat all this "jerked" food. Seemingly, they hunt for the mere joy of it and, not being hungry, hang it up for future use.

While the normal food of Loggerhead Shrikes is insects, they sometimes indulge in mice and birds. One

would not begrudge the mice but their habit of sometimes pursuing, and killing, small birds has given them the name of Butcher-bird and a most unsavory reputation.

Because of this reputation the Biological Survey has made an exhaustive study of their food habits. In Bulletin No. 30 we are told that, like the Hawks and Owls, these birds disgorge the hair and bones of vertebræ eaten, which helps the investigators to diagnose their bill of fare. Prof. Beal tells us that 83 per cent of the Shrike's food is insects, 2 per cent spiders and a few snails, vertebrates 12 per cent, the western bird eating more insects than the eastern, this probably being due to the fact that insects are found at all times of year in the milder climate of the west.

GENUS LANIUS: NORTHERN SHRIKE.

Northern Shrike: *Lanius borealis*.

FAMILY—SHRIKES.

THE Northern Shrike is the largest of the family and is a dweller in the far north, coming into the United States only as a winter visitor, and being found on the western coast to central California and south to Arizona, New Mexico, Texas, Kentucky, and Virginia.

It is a handsome, showy bird about ten and one-half inches long, the prevailing color being gray, with the under parts whitish, generally finely barred with black; the wings and tail are black with white patches, the white on tail forming a semi-circle in flight; the forehead is white and a line through the eye, black.

This is the member of the family that does the most harm among other birds and is mostly responsible for the bad reputation of the tribe. In the east the Shrike

renders a service in killing English Sparrows, although he is not averse to other birds when he can get them, but in the west where these foreign pests are not so abundant, he takes Sparrows, Horned Larks, and others, causing us to feel thankful that he does not nest in our midst.

Though this Northern Shrike, as well as other members of the family, has a harsh, uncanny call with which most people are familiar, few know that these birds also have a sweet song. They are fond of singing it from the top of the highest tree, in hopes, no doubt, that all may know about their vocal ability and think less harshly of them.

GENUS LANIUS: CALIFORNIA SHRIKE.

California Shrike: *Lanius hedovicianus gambeli*.

FAMILY—SHRIKES.

THE California Shrike on the west coast takes the place of the Loggerhead in the east. It breeds in the interior valleys of southern British Columbia, Washington, Oregon, California, south. From Marion County, California, southward the bird extends to the coast and is abundant. It differs not materially from the eastern species, being perhaps grayer below and having fine transverse brown-gray lines on chest and sides of breast.

It is about nine inches long and the upper parts are a soft gray, relieved by black wings, tail, and bridle through eye. Under parts dull white, or grayish; breast narrowly barred with grayish. Young similar but with under parts grayer and more barred.

Sometimes the Mockingbirds and Shrikes are mistaken for each other, although the careful observer could

hardly confuse the two. Even if the thick, hooked bill, or bridle through eye of the Butcher-bird could not be seen, the difference in the shape of the two birds ought to be enough, the Shrike being short and plump, rather than long and slender like the Mockingbird. He is a clearer gray and is in every way handsomer.

In actions he is stoical and slow, rather than alert and quick. I have watched Madam Mocker giving one of these birds such a scolding that he soon flew away, seemingly glad to escape her harsh tongue. Standing on the wire a few feet from him, she had evidently been telling him what she thought of him, and it was anything but complimentary, I felt sure. In no way did the Shrike resent this tirade but moved on when he found that he was not wanted.

In its habits it is practically the same bird as the eastern and one knowing one could not mistake the other.

The ordinary call of the Shrike is a harsh, rasping screech that is rather disconcerting. Few people know that the bird has a rather sweet, warbling song that is low and not unmusical. In southern California I have heard this song when nesting duties were over as well as during the winter months. The birds seem to like a high place to sing from, one of them choosing the highest pinnacle of the highest eucalyptus in my neighborhood; and down the street another bird was singing from a telephone pole. For several days the bird on the tree sang from the same perch and he seemed as full of the joy of singing as ever does the gray minstrel for whom he is sometimes mistaken.

These birds are rather shy about their nests and dislike being watched. They are fond of orange groves as nesting sites, but also use thorny shrubs and low bushes, or trees, when outside the orange grove district. The nest is a bulky affair which is made of sticks, grasses,

fibers, string, wool and soft material for a lining. A nest I once found contained five fully feathered young that quite resembled the adults. The filled nest was one of the prettiest ones I have seen for the young were packed tightly in in the most symmetrical way, with the gray heads turned outward, forming a pretty border around the rim.

Though these California Shrikes sometimes kill young chickens and eat their brains, behead caged Canaries, and occasionally other small birds, ordinarily they are seen minding their own business, sometimes surrounded by smaller birds that pay no attention to them, and showing that they do not fear the big gray bird in their midst.

This Shrike is very fond of that pest, the Jerusalem cricket, which eats potatoes in the ground and is a most uncanny-looking creature. Because of his insect-eating habits he is considered beneficial, but when they take the lives of our song birds they should be destroyed.

Another Shrike which differs from the California in being much darker and smaller, and in having the white of wings and tail restricted, is found on the Santa Barbara and San Clemente Islands, off the coast of California, and is called the Island Shrike (*L. l. ánthonyi*).

White-rumped Shrike: *Lanius hedovicianus excubitorides*.

FAMILY—SHRIKES.

ANOTHER member of this family which is found from the Great Plains westward, along the east side of the Sierra Nevadas, in Washington and to southeastern California, Arizona, and Texas, is called the White-rumped Shrike. It differs from the California chiefly in having a whitish breast.

In habits the two are similar, the California being the bird commonly seen in the coast regions of the state whose name it bears, the other over the mountain ranges in the desert regions and the sage-brush country.

FAMILY— VIREONIDÆ: VIREOS.

AMONG the most fascinating and at the same time the most tantalizing of our birds are those little olive-plumaged songsters, the Vireos.

They are fascinating because, though not gay in plumage, they are graceful and trim, and their songs are exquisite, being clear, liquid, and so loud that they seem to come from a larger bird, rather than one scarcely five inches long. They are tantalizing because of their similarity in plumage and their restless habit of foraging among the leaves, which makes them hard to identify.

The difference in the note is the easiest way to tell them, but if you do not know this, or the bird does not give it, you are still in doubt. Some of them might be Flycatchers, or Kinglets, so far as coloring and size go. However, they nearly always sing, or give their harsh call note, as they flit about. This call is a sort of nasal, rasping scold, and is not unlike one sometimes given by the Wrens. It is not a pleasing note and makes one wonder why a bird with the ability to sing so sweet a song need indulge in so rasping a note.

Though some members of the family are fond of fruit and seeds, for the most part they are insect eaters and, as such, are most beneficial since they like small green caterpillars, grasshoppers, gipsy and brown-tailed moths, various sorts of beetles, katydids, flies, gnats, mosquitoes, scales, etc. They have a way of flying out from the trees, flycatcher-fashion, thus guarding the air and leaves. And, too, one or other of the several species inhabits pretty much everything in the way of a tree

from the monarchs of the forest down to the humblest underbrush.

Most of them are migrants and leave the United States during the winter months, but a few of them remain on the western coast throughout the year. The peculiar hooked bill, with the conspicuous rictal bristles, will help to place these midgets in the right family if you fail to get the generic name.

They are among the finest of our nest builders, suspending a beautifully constructed cup from the arms of a forked branch. The sexes are similar. They are often called GREENLETS.

GENUS VIREOSYLVA: WESTERN WARBLING VIREO.

Western Warbling Vireo: *Vireosylva gilva*
swainsoni.

FAMILY—VIREOS.

THIS bird quite resembles its eastern cousin but has been listed as a subspecies by the scientists. It breeds from British Columbia south to Lower California, Arizona, New Mexico, and western Texas, and east to western South Dakota and northwestern Nebraska; wintering south to Guatemala.

In the west the bird is not quite so friendly as in the east, preferring the high altitudes of the mountains for nesting purposes, although in some localities they nest near mankind and during migrations are frequently seen and their sweet warbling song often heard.

Both birds help build the dainty cup-nest and the male also shares the arduous duties of incubation. Baby Vireos are wonderfully pretty little birds with their soft dull-colored plumage and their gentle ways.

I cannot help but feel grateful to this Warbling Vireo because most of the western species are so nondescript as to be most maddening, while this bird has a *light line through the eye*, which the others have not. The song, too, is different and helpful. They are five inches long; olive-gray upper parts; no wing bars; dull white under parts which are sometimes washed with olive-yellow on sides; light line down the eye, but no dark line through it.

GENUS LANIVIREO: CASSIN'S VIREO.

Cassin's Vireo: *Lanivireo solitarius cassinii*.

FAMILY—VIREOS.

CASSIN'S Vireo is the western representative of the Blue-headed, which is not found on this coast. It is a summer visitor and while sometimes seen as it passes through the valleys, one must go to the mountains to get well acquainted with it.

It resembles the eastern form, the blue-gray head with the white eye ring, lores, and throat make it distinctive as it peers at you from its leafy home. It is about five inches long, the back is dull olive, wings have two clear white bands, and under parts are white, washed with olive and yellow on sides. The young in first winter are dull grayish-brown above, and dull buffy below.

Sometimes these birds are found as high as 7000 feet, in the mountain canyons they frequent, nesting in white oaks and conifers, although cottonwoods and alders are used as nesting sites. In fact, I once found a nest on a frail limb of a bay tree which grew near a rushing mountain stream. It was a flat, shallow nest, quite different from that of the Hutton's Vireo, although hung between two supports in true Vireo fashion. The nesting bird was not afraid but was very quiet and not once did I

hear the sweet Vireo song, although the harsh call note was sometimes given. These birds are easy to identify because of the white line running from eye-ring to bill. One year when we were in the Sierra Nevada Mountains in Tulare County these Vireos were very abundant and one near our cabin sang all day long, "Gee! Mary's here!" in a musical voice. There were many nests and on one of them a male was brooding and singing as he did so.

GENUS VIREO: HUTTON'S VIREO.

Hutton's Vireo: *Vireo huttoni huttoni*.

FAMILY—VIREOS.

HUTTON'S Vireo is a little fellow about four and one-half inches long and is a California bird, which is found west of the Sierra Nevada from Siskiyou County south to San Diego.

It is a dull colored midget that might, so far as plumage and foraging habits go, be mistaken for the Ruby-crowned Kinglet. The call notes are entirely different and in its southern range it is helpful to know that while the Kinglet is a winter visitor, for the most part the Vireo is a summer resident, although they also frequent the canyons in winter time. The end of tail is straight, while that of Kinglet is emarginate.

It is scarcely five inches long and has olive brown uppers, dull white eye-ring, lores, and wing bars; dull white olive parts tinged with yellow.

Though preferring the oak regions of the mesas and foothills, they are also found from the willow regions of the lowlands to several thousand feet elevation in the mountains.

One nest that I found in a mountain canyon was

hung about ten feet from the ground on a small twig of a live oak tree which grew beside a running stream. It was a tiny cup made of fine fibers and decorated with white sage blooms, and bits of paper napkins, evidently the remains of some campers' lunch-box. It seems to be the habit of this family to decorate the outside of the nest, which gives it a rough, patched appearance. The inside is beautifully made with fine fibers.

This nest was right beside the footpath, where many people daily passed without observing it. In fact, the four noisy nestlings it contained first attracted my attention to it. They were fully feathered and replicas of their parents, being the daintiest olive-colored midgets imaginable. The old birds did not mind my presence, save when I gave too close a scrutiny to the young and then they were more dignified than many species at so trying a time.

On the Pacific Coast, extending from Oregon northward is found the Anthony's Vireo (*V. h. obscurus*), a subspecies which differs from Hutton's chiefly in having darker plumage. It is sometimes called Dusky Vireo.

In southern Arizona to western Texas, south, another subspecies, which is paler, is known as Stephen's Vireo.

GENUS VIREO: LEAST VIREO.

Least Vireo: *Vireo belli pusillus*.

FAMILY—VIREOS.

THIS little Vireo ranges from central California, southwestern Nevada, and western Texas south to northern Lower California. It is common in California in the willows along the streams, seeming to prefer these thickets to the higher altitudes of the mountains.

The upper parts are gray, faintly tinged with olive

on rump; under parts white, sides washed with olive; one or two wing bars; lores gray and white. About five inches long.

It was my pleasure one July day to see and hear a pair of these little midgets as they foraged among the bushes of a little canyon in the foothills of the Sierra Madre Mountains above Altadena, California. It seemed as if they were rather out of their habitat, but there they were, a delight to all beholders. The bubbling ecstatic song rang out again, and again, the first part of it asking a question, the second answering it. It reminded me of the song of the Warbling Vireo, but was shorter and snappier. The plumage, also, made one think of the Warbling, but lack of the white line over the eye helped to place the bird where it belonged.

GENUS VIREO: GRAY VIREO.

Gray Vireo: *Vireo vicinior*.

FAMILY—VIREOS.

THE Gray Vireo is somewhat larger than Least and is not so greenish as most of his tribe. The wing bars are wanting, or indistinct; lores and eye-ring white. It is found only in southern California, southern Nevada, the Grand Canyon of the Colorado, and southeastern Colorado, south.

It frequents lower altitudes than does Cassin's, preferring the valleys, wide canyons, and level mesas to the mountains. Henshaw thinks the song of the Gray Vireo is the finest of all the Vireos because of its beauty and variety of notes, and mellowness of expression.

FAMILY—MNIOTILTIDÆ: WOOD WARBLERS.

THIS interesting Wood Warbler family is found only in America, there being about one hundred and fifty-five known species, the great majority of which live *east* of the Rocky Mountains. They should not be confused with the Old World Warblers (Family—Sylviidæ, in which are the Kinglets and Gnatcatchers), from which they are quite different.

The majority of them are about five inches long and many of them are brightly plumaged, yellow being the commonest color. They have slender, pointed bills, which render them valuable insect destroyers.

In many parts of the United States they are known, only, as passing migrants, since they winter farther south, and many of them pass the summer north of our country.

As early as March they begin to appear, but are usually most abundant in April, or early May. Several species band together into a flock and, we are told, travel by night, which may account for their sudden appearance among us, and their as sudden departure.

Most of these Warblers are dwellers of the tree-tops, but others there are that hunt lower down among the bushes, while still others guard the ground, peering under the dead leaves for insect life. Some are veritable flycatchers, so far as manner of getting their food is concerned, and still others hunt over the tree-trunk and limbs, digging into crevices with their pointed bills. Wherever found they are among the best guardians of our trees.



YELLOWTHROAT.



Copyright by Brown Brothers.

LONG-TAILED CHAT.

GENUS VERMIVORA: NASHVILLE
WARBLER. (Eastern.)

Nashville Warbler: *Vermivora rubricapilla*
rubricapilla.

FAMILY—WOOD WARBLERS.

THESE birds have gray heads with a partially concealed chestnut crown patch, which is less in extent in the female, and often wanting. The prevailing upper parts are olive green, and the under parts a bright yellow; white eye-ring; no white tail patches, or wing bars. The immature birds are duller and usually lack the crown patch.

It is fond of the open woodland and tree-bordered fields rather than the mountain heights, ranging from north of the United States south to Nebraska, northern Illinois, northern Pennsylvania, northern New Jersey, and Connecticut; wintering casually in Texas, but usually farther south.

The nest is made of grasses and fibers and placed on the ground in partial clearings, or tree-grown pastures.

Thayer says that the Nashville has at least two main perch-songs, and a flight-song, all subject to a good deal of variation. The latter, a fairly common performance in late summer, is sung from the height of five to forty feet above the (usually low) tree-tops. It is like the commoner perch-songs, but more hurried, and slightly elaborated—often with a few chippings added at both ends. It has a very small, dry *chip* call, and a more metallic, louder *chip*, somewhat Water-Thrush-like. It also *chippers* like a young Warbler or a Black-throated Green.

GENUS VERMIVORA: CALAVERAS WARBLER.

Calaveras Warbler: *Vermivora rubricapilla
gutturális.*

FAMILY—WOOD WARBLERS.

THE Calaveras Warbler is the western representative of the Nashville, and differs from it in plumage chiefly in having the under parts a deeper, richer yellow, and the rump and upper tail coverts brighter.

It breeds from British Columbia south to central California, east to Sierra Nevada, eastern Oregon, and Idaho; wintering below the United States.

In southern California the birds appear as migrants, usually in the spring, and in company with Hermits, Macgillivrays, Townsends, Black-throated Gray, and other western species. It is fond of flitting about among the bushes and low trees, its somber uppers blending with its surroundings, but the bright yellow breast showing conspicuously if the bird forages above the observer.

Like the Nashville, this exquisite bird nests on the ground, in some localities placing it at the foot of a pine or oak tree, where it is sunk well into the ground, or moss, and in others beneath some bush or rank growth, where it is so well concealed as to easily defy detection from mankind, although I fear me, their four-footed enemies, and snakes, are not so easily deceived.

GENUS VERMIVORA: ORANGE- CROWNED WARBLER. (Eastern.)

Orange-crowned Warbler: *Vermivora celata celata.*

FAMILY—WOOD WARBLERS.

THE Orange-crowned Warbler and its allies are the despair of the bird student because of their dull, almost

uniform coloring of olive-green, relieved only by indistinct stripings on the under parts, a light eye-ring and stripe extending from bill to above eye; and an orange crown patch, which is not always very pronounced, especially in the female, and lacking in young. As it flits about in the tree-tops there are no pronounced markings to differentiate it.

It is a bird of central North America, coming south locally in the Rocky Mountains to New Mexico; wintering in the Gulf and South Atlantic States to South Carolina and south through Mexico, being seen in many localities as a passing migrant, only.

GENUS VERMIVORA: LUTESCENT WARBLER.

Lutescent Warbler: *Vermivora celata lutescens*.

FAMILY—WOOD WARBLERS.

IN the west are two subspecies of the Orange-crowned; one, the Lutescent, differing in being a more pronounced yellow, the young having dull wing-bars, and the Dusky which is darker and breeds on the Santa Barbara Islands, and visits the mainland after the breeding season.

The Lutescent breeds from Alaska to the mountains of Los Angeles County, California; wintering from southern California and Arizona, southward.

They are friendly little sprites and are the first of the spring migrants to visit my yard, where they forage, mostly, among the vines on the ground and the low shrubs, unmindful of my presence. Sometimes they hang, upside down like Bush-tits, or Chickadees, from the end of a pepper spray, searching out scales, or tiny insect life. Never have I seen any crown patch. They are just nondescript like midgets that one knows are

Warblers by their form, actions, and notes, but which the novice might easily find difficult in identifying.

They are fond of chaparral hillsides and brushy open woods, where they place their nest on or near the ground in some tangled growth, or under a rooty bank, using grasses and dry leaves with finer material, and sometimes hair, for the lining.

Like most members of their family, these birds keep up a thin call note as they flit about. Warblers are not really musicians, but one learns to know the notes which, though weak and thin, belong unmistakably to the Wood Warblers.

According to Dawson, in his "Birds of Washington," the song of the Lutescent Warbler seems to have been largely overlooked, although it was not the fault of the bird. "While waiting for his tardy mate, he has rehearsed diligently from the taller bushes of the thicket, or else from some higher vantage point of maple, dogwood, or fir tree. The burden is intended for fairy ears, but he that hath ears to hear let him hear a curious vowel scale, an inspired rattle or trill, which descends and ends in a simple warble of several notes. The trill, brief as it is, has three qualities of change which make it quite unique. At the opening the notes are full and slow but in the instant necessary to the entire recital, the pace accelerates, the pitch rises slightly, and the component notes decrease in volume, or size. At the climax the tension breaks unexpectedly in the gentle, musical cadence of the concluding phrases, whose notes much resemble certain of the Yellow Warbler's. The opening trill carries to a considerable distance, but the sweetness of the closing warble is lost to any but near listeners."

SUBGENUS DENDROICA: CALIFORNIA
YELLOW WARBLER.

California Yellow Warbler: *Dendroica æstiva*
bréwsteri.

FAMILY—WOOD WARBLERS.

ONE of the commonest, best known Warblers, during the summer months, is the slender yellow bird which is so often known as the Summer Bird, or Wild Canary, but which is really the Yellow Warbler.

It is a widely distributed North American species that breeds east of Alaska and Pacific slope from the tree limit south to Nevada, northern New Mexico, southern Missouri, and northern South Carolina. It breeds in most of its range, but goes as far south as Brazil and Peru for the winter. In the west, southern Arizona, New Mexico, and western Texas, a similar bird is called the Sonora (*D. a. sonorána*); while west of the Cascade and Sierra Nevada mountains from Washington to southern California, it has been designated as the California Yellow Warbler (*Dendroica æstiva bréwsteri*).

Like most of the Warblers, it is about five inches in length, and the prevailing color is a deep yellow, the back, wings, and tail being a greenish yellow; the wings edged with lighter yellow, and the *inner vanes of tail a light yellow*; the bright breast of the male is streaked with rufous. The female is less bright and has few markings on breast; young similar but without under markings.

Not only is this bird one of the gayest plumaged, but it is also one of the most friendly, coming to the orchards, shade trees, parks, and along the streams, to build, where it flits about in the open, or from tree to tree, keeping

up its *ci-ci-ci* call, or *wee-chee, chee, chee*, unmindful of human presence.

On the western coast they are not quite so often seen about gardens, although one pair always nests in my neighborhood, often bringing their fluffy balls of babies to my garden to feed. Such tiny midgets are they, and so well do they blend with the trees where they rest, that I greatly fear that the parents would never find them did they not keep up an incessant *chee* call. In their persistent calling they resemble the parents, the male singing his monotonous song all summer long with scarcely a moment's intermission. The song most commonly given by the western bird is a sharp *ci-ci-ci-ci*, but a song similar to that of the eastern species is also given. *Wee-chee, chee, chee, chér-wee.*

The nest is a dainty, but loosely constructed, affair which the female builds in a remarkably short time, using grasses, plant fibers and down, sometimes bound together with webs, and frequently placed in an upright crotch, or against one stem, to which it is bound.

Since its food consists mostly of insects and spiders, and since it nests in orchards where these pests abound, it is considered one of our most useful species.

Prof. Beal tells of a nest of these Warblers situated in a prune orchard that was watched for six hours, distributed over three days, when it contained two week-old young. In six hours one hundred and eighty-one feedings were observed, an average of thirty and one-sixth per hour. As there were only two young, presumably each nestling was fed fifteen times each hour, or in a day of fourteen hours, two hundred and ten times. Probably, too, there was more than one insect fed each time, thus increasing these birds' usefulness.

GENUS DENDROICA: MYRTLE OR
YELLOW-RUMPED WARBLER.

Myrtle Warbler: *Dendroica coronáta*.

FAMILY—WOOD WARBLERS.

THE Myrtle or Yellow-rumped Warbler is a familiar summer resident of the extreme northern and eastern United States, wintering from Kansas, the Ohio Valley, and New Jersey, south, and being so abundant in every woodland patch during migrations as to be a well-known species. On the western coast the bird nests in parts of Washington and appears as a winter visitant or migrant farther south.

This bird is somewhat larger than many of the Warblers, being five and one-half inches long, and is extremely handsome in his make-up. The prevailing upper parts of the male in summer plumage are a blue-gray striped with black; the tail is black with white markings on the three outer pairs of feathers which are conspicuous in flight; the side of the head, the chest and the markings on the white belly are black; two wing bars and the throat are white, but the thing which makes the bird beautiful and conspicuous is its yellow markings which occur in spots on rump, crown, and each side of breast. The plumage of the female is duller with the yellow spots restricted and the winter plumage of both birds is enough different to confuse many bird students. The blue-gray back becomes dull with a brownish cast, the black breast-patch is lacking, as are also most of the yellow spots. The plumage differs in individuals, and where you sometimes see one that has a yellow crown and a suggestion of color on the breast, quite often both these patches are obscured. However, the rump seems always to remain yellow and that, with the white wing and tail

markings, makes identification easy. While this bird appears on the Pacific coast, in most localities as a migrant or winter visitor, it is not nearly so common as is the Audubon, its western representative.

The nest is of the usual fibers and grasses, and placed from five to ten feet in a coniferous tree. Chapman says that the birds are very fond of bayberries and that their movements are governed largely by the presence of these berries. Banded together in loose flocks they forage in old fields and scrubby growths.

The common call is a sharp *tchep* which makes identification easy even when the bird is not in sight. Thayer gives the song as a loud and silvery sleigh-bell trill—a vivid, sprightly utterance—often more or less broken up into separate notes, particularly in its diminuendo termination.

GENUS DENDROICA: AUDUBON'S WARBLER.

Audubon's Warbler: *Dendroica auduboni auduboni*.

FAMILY—WOOD WARBLERS.

WHILE the Myrtle Warbler strays to the Pacific coast during the winter months, it is not nearly so common as is the Audubon, which closely resembles it, and which breeds from the tree limit in northwestern Alaska south to the mountains of southern California, northern Arizona, and southeastern New Mexico; east to the Black Hills, South Dakota, and western Nebraska, wintering in the valleys of California; accidental in Pennsylvania and Massachusetts.

The Audubon Warbler differs from its eastern cousin chiefly in having a bright *yellow* throat where the Myrtle has a *white* one; the side of the head is gray, not black;

the wings have a white patch rather than two bars; and one more white spot shows in the tail—four, rather than three.

Every bird lover in southern California looks forward with delight to the coming of the first Audubon Warbler, which is usually early in October, they being abundant winter residents in the valleys, nesting in the mountains, or going farther north.

The common call note is a sharp *quit* or *quip*, which they are forever giving as they forage among the leaves, dine from my cafeteria, or fly through the air. One familiar with this call is able to trace the bird when he is flying too high to be easily identified.

The male as seen throughout the winter months is quite a different bird from that of the summer. He is a dull gray with indistinct markings, a yellow rump, and sometimes yellow throat and crown. At other times he shows little yellow. But the white tail markings and the yellow rump will assure you that it is *auduboni* that you are beholding. It is extremely interesting to watch the summer plumage replacing the winter. Gradually, the black of breast and sides begins to crop out, the bird's face is often smutty as if he had stuck his bill in mud, the back becomes bluer and more striped, and the yellow flares forth until you behold the handsomest and slickest of dandies. No wonder that his song is the most insignificant warble, heard sometimes before he leaves us in April. Why should such a beauty sing anyway? Leave that accomplishment to those of plainer garb.

When spring comes these birds wend their way to the mountains, where they are fond of nesting in pines and spruces, placing their bulky nests from four to fifty feet from the ground. Dawson, who has studied their nesting habits in Washington, says the nest is a well-built, bulky structure of fir twigs, weed stems, rootlets, etc.,

heavily lined with horse hairs and feathers; placed usually on branch of conifer, sometimes in small trees close against trunk, measuring four inches in width outside by two and three-quarters in depth; inside two by one and one-half. The birds raise two broods.

Economically, these Warblers are among our most beneficial because of their fondness for minute insect life which larger birds would overlook, because of their fly-catching habits, and their abundance in orchard and garden. I have often watched these birds dart out from a tree, zig-zag through the air, tumble down, or fly upward before returning to the tree and I felt sure that this clownish performance was not for my amusement, but to appease their own appetites. I have watched them, also, on a stretch of lawn when five or six of them were daintily hopping about, or taking short flights, and eating aphids, or other minute life.

They are of especial value in California, because of the good they do in ridding the trees of scales, those pests of the orchardist; scales and plant-lice forming a considerable part of Audubon's diet. Henshaw tells us that flies are its largest item of food, only a few Fly-catchers and Swallows eating as many as do these birds. Let us not forget this as we wage our "Swat the Fly" campaign.

GENUS DENDROICA: BLACK- THROATED GRAY WARBLER.

Black-throated Gray Warbler: *Dendroica gráciæ*.

FAMILY—WOOD WARBLERS.

THIS little Warbler is a strikingly garbed black and white beauty that ranges from British Columbia, Nevada, northern Utah, and northwestern Colorado south

to northern Lower California, southern Arizona, and northern New Mexico; winters in south of the United States.

Just why this bird was not called the black and white striped warbler, rather than a name which does not adequately describe it, I do not know. If, however, in your woodland rambles you come upon a bird about five inches long that has a black throat, a head striped in black and white; a body gray with black markings, the white under parts also having black stripes on sides, you may be sure that you are beholding one of these charming birds. They are supposed to have a yellow spot over the eye, but unless you are very close, it will not show. The female is duller, with crown grayer and throat mottled with white; young in fall plumage resembling adults, but duller.

The eastern bird most nearly resembling this one is the Black and White Warbler, but it does not even belong to the same genus, and is quite different in actions.

This little westerner builds a nest high up in a pine tree, or lower down in a dense scrub oak thicket; building a rather loosely-constructed nest of dried grasses, moss, and fibers, sometimes lined with feathers. Mrs. Bailey says that it is especially fond of scrub oaks, piñons, junipers, and manzanitas, where it sings its simple *zee-ee, zee-ee, ze, ze, ze* song as it forages in the bushes.

Sometimes in migrations these birds come into my pepper trees, where they are not at all shy, not in the least minding inspection.

GENUS DENDROICA: TOWNSEND'S
WARBLER.Townsend's Warbler: *Dendroica townsendi*.

FAMILY—WOOD WARBLERS.

TOWNSEND'S Warbler is a westerner which breeds from Alaska south to Washington and east to western Montana, in migration going to eastern Wyoming, Colorado, and western Texas; wintering from central California, south.

The eastern Warbler which it most nearly resembles is the Blackburnian. The bird in the west which has a very similar plumage pattern is the Black-throated Gray and if seen in a picture they are quite similar. Really, however, they are not at all alike, since the white on head and breast of the Black-throated is replaced in *townsendi* by a deep orange-yellow. The back of the latter is also greenish with black markings instead of gray; two white wing bars and the white on tail are similar in both birds; throats black. The female resembles the male in his winter attire, in which the black is obscured with olive-green shadings and the throat is lemon-yellow. The young are similar but with less black on head and sides.

In southern California these birds are seen most frequently as spring migrants, where they forage in the trees with other passing Warblers, fly down on to the ground, even fluttering over plowed fields in search of insect life. Like others of their tribe they are unmindful of human inspection at this time.

Dawson tells us that the birds that nest in Washington build rather bulky structures, chiefly of cedar bark with a few slender fir twigs interwoven, lined with stems of moss flowers and placed at a modest height in young

fir trees well out on a limb, or settled against the trunk.

Bendire says that the birds build in willows, about four feet from the ground, the nest being made of rotten plant fibers and roots, lined with rootlets, hair and plant down.

Coues says that this bird is closely related to the Black-throated Green Warbler, of which it is the western representative. It will be seen that several of this genus are marked much alike, although the colors are differently arranged.

Dr. Merriam gives the note of the Townsend as a drawled *dée-dee*, *deé-de-de*, while Dawson records it as *dzwee*, *dzwee*, *dzwee*, *dzwee*, *dzweetsee*, the first four notes drowsy and drawling, the fourth prolonged, and the remainder somewhat furry and squeaky.

To me it matters not whether the bird sings, or not; he is handsome enough to delight the eye, and the Warbler songs, at best, are not very appealing.

GENUS DENDROICA: HERMIT WARBLER.

Hermit Warbler: *Dendroica occidentalis*.

FAMILY—WOOD WARBLERS.

THE Hermit is one of the daintiest, most strikingly garbed of western Warblers. It breeds from British Columbia (chiefly west of the Cascades) to southern Sierra Nevada in California; in migration to Nevada and Arizona, wintering in Mexico and Guatemala.

The upper parts are gray, which becomes almost black at the back of the neck, streaked with black; wings and tail black with two bars in former and outer feathers of latter, white; under parts white, save for a deep black patch on chin and throat. But the thing which at once attracts attention and makes the bird conspicuous at

some distance is the lemon-yellow head, the color extending down to the black patch and forming a gay hood. In fall plumage the male has some black on the head and the throat veiled with whitish. The female resembles the male in fall garb, but has less yellow on head, and the throat is usually yellow, bordered posteriorly with black. Young resemble the adults, but have greenish backs and are duller with markings less distinct.

These charming birds begin to be seen in southern California the last of April, often in company with Macgillivrays, Calaveras, Black-throated Gray, and Black-capped. Together they all forage in tree-top, being especially fond of the oak tassels, low bushes, even going down on to the ground in search of insect life. One day the last of April I stood in Eagle Rock Cañon, Los Angeles County, surrounded by a band of these various species that were flitting about unmindful of my presence and I was able to fully revel in their beauty. It seemed out of place when they flew down into the rank grass, or out into the plowed field near the mouth of the canyon, but this they did many times during the morning.

The common call note of the Hermit is a thin sharp *tsit* given frequently as the bird flits about. Barlow gives the song as *tsit, tsit, tsit, tsit, chee chee chee*, the first four syllables being uttered with a gradual and uniform speed, ending quickly with the *chee chee chee*. However, the bird is distinctive enough to be easily identified, and so beautiful that its weak song adds little to its attractiveness.

To enjoy these birds in their summer home, one must go to the fir trees of the north, where they place their dainty cup so high in the trees that they are beyond the sight, or reach, of the ordinary bird student.

GENUS OPORORNIS: MACGILLIVRAY
OR TOLMIE WARBLER.

Tolmie Warbler: Oporornis tolmiei.

FAMILY—WOOD WARBLERS.

THE Macgillivray or Tolmie Warbler is easy of identification as you see him flitting about in the chaparral or trees because his head, throat, and breast are a dark slate gray, relieved by a black spot between eye and bill (lores) and a white line (discontinued eye-ring) above and below the black eye. The lighter ashy tips of the throat feathers give a mottled appearance. The olive upper parts and the bright yellow which joins the gray breast complete a distinctive, but handsome costume, which always has the appearance of being well groomed. The adult female has the head and neck a paler ash, which fades to a paler shade, or grayish white, on throat and chest.

This Warbler is about five inches long and ranges along the Pacific Coast, through southern Arizona and northern New Mexico, to the eastern foothills of the Rocky Mountains and southwestern South Dakota; casual in migration to North Dakota, Nebraska, and central Texas.

This charming western bird is a frequenter of brush-covered hillsides, canyons, or wooded thickets, especially if there be water near, where it places its nest in an upright crotch from a few inches to a few feet from the ground. Sometimes the nest is built in a clump of weeds on the hillside, or an open place in the mountains, but wherever the location, bush or weed clump, the nests are hard to find, for the bird is shy at this time and slips to and from the nest, so blending with the grasses and foliage that it escapes detection.

The common alarm note of these birds is a *chuck* or *tsick*, and the song as given by Dawson is a *sheep sheep sheep shear shear sheep*, given in a brisk, business-like tone, devoid of musical quality.

GENUS GEOTHLYPIS: YELLOW-THROATS.

To the bird student who has puzzled her brain over various members of this exasperating family, oftentimes being unable to determine to just which species some nondescript female belonged, the Yellow-throats come as a relief. And yet it is only in the case of the males that we can feel quite confident, since the females are of a dull olive-green, their call note and their habitat, rather than their plumage, helping to place them.

However, it is with delight that one beholds this jaunty male Yellow-throat. Whether found east or west he is so similar in plumage and habits as to make him unmistakable. Nor will the ordinary bird student mind that there are several subspecies which makes it somewhat difficult to know to a certainty just which bird you are enjoying. Suffice it that when you see a bird about five inches long whose upper parts are a uniform olive-green, whose breast and throat are a brilliant yellow, whose forehead and eyes are masked with a broad black streak edged on the back with a gray, or white, line, you may be sure that you are beholding a Yellow-throat, and it matters little just which particular one he may be. The female lacks the black mask and her breast is duller than that of the male, making her an inconspicuous midget.

These birds are fond of the water, especially if it be stagnant; swamps, marshes, and sloughs where grow tules and rank grasses being their delight. As the male

peeks from out his hiding place in some dense tangle, the thought of a highway robber whose eyes are concealed with a black domino, flashes through your mind, only to be as quickly cast aside when you behold the gay breast and the friendly attitude of the highwayman. Surely, though he wear a mask no holdup was intended, unless, indeed, it be a holdup of insect life, and according to all observers these pests had best beware for few of them escape the bright eyes of this little warbler.

Forbush tells us of a pair of these Northern Yellowthroats that were watched by Mr. Mosher as they fed on plant lice from birches in Massachusetts, that were seen to eat 89 insects in one minute. Continuing eating at this rate for forty minutes it was estimated that over 7,000 plant lice were consumed. The small size and soft bodies of the insects which made them easily compressed in the stomach, and the rapid digestion of the birds made it possible for them to eat this amount. These Yellowthroats were seen to come daily to these birches and feed upon the plant lice. Making a conservative estimate of the amount eaten, Mr. Forbush believes 10,500 aphids were consumed daily, or 73,500 a week. Surely, this sort of highway robbing has our most hearty approval.

Besides plant aphids, the Yellowthroat is fond of many injurious insects. Leaf hoppers, which occur in some pastures to the number of a million to an acre, and eat as much grass as one cow, are preyed upon by these Warblers. In the orchards they hunt out the cankerworms for their young, as well as caterpillars of the gipsy moth, one bird having eaten 52 of these pests in a few minutes. Beetles, flies, the western cucumber beetle, and the black olive scale are also relished by these birds.

GENUS GEOTHTLYPIS: MARYLAND
YELLOW-THROAT. (Eastern.)Maryland Yellow-Throat: *Geothlypis trichas trichas*.

FAMILY—WOOD WARBLERS.

THE bird of this genus most familiar in the east and middle west is known as the Maryland Yellow-throat and is a summer visitor, only, through most of his breeding range, spending the winter months in the southern States and farther south.

Like others of his tribe he is a dweller of marshy ground, choosing berry bushes, or other dense tangles, and in some localities the foul-smelling skunk's cabbage, for nesting sites. The nest is a deep cup-shaped, sometimes rather bulky, structure which is placed on the ground, or a few feet above when it is woven onto the coarse grass or tules for support. The material used is dried leaves, grasses, or strips of bark, lined with finer rootlets, fibers, and sometimes horsehair.

It is not the easiest kind of a nest to locate because of the surrounding wetness; even when you are sure that baby Yellow-throats are not far away, the prickly tangle, together with the water beneath, will keep you from them.

The birds are inquisitive midgets and as they slip through the thicket will stop to peek out at the intruder who has entered their domain. If they refuse to come into view, a smacking noise or squeal will bring them about.

The ordinary call has been compared to the striking together of two stones, variously given as *chack*, *chit*, or *pit*, which best represents the bird if the vocal sound is eliminated. As the birds forage they give their call note and also their cheery, energetic song peals forth at fre-

quent intervals. To many the bird says, *wíchity, wíchity, wíchity, wíchity*; others hear it as *rápity, rápity*, oft repeated; while still others think the bird says, *I beseech you, I beseech you*; or *Follow me, Follow me*.

I presume when the bird says, *Follow me*, that it is utterly impossible to do so, and that when it is possible to do so he *Beseeches* his follower to desist. To this bird is also accredited a flight song.

In the southeastern part of our country is a similar bird, which is called the Florida Yellow-throat (*G. t. ignota*), the chief difference being in the longer tarsus, tail, and bill, the deeper yellow of the under parts, the broader black mask and wider gray, adjoining it.

GENUS GEOTHYLPIS: WESTERN YELLOW-THROAT.

Western Yellow-Throat: *Geothlypis trichas
occidentália.*

FAMILY—WOOD WARBLERS.

WHILE the Maryland Yellow-throat is not found west of the Rockies, there are several similar birds that take his place. One, the Western Yellow-throat, occupies the western United States, except the Pacific Coast district; from South Dakota to southeastern California and western Texas. Another of the more common forms is known as the Pacific Yellow-throat and is a resident of the Coast States (*G. t. arizela*).

In plumage, habits, and notes the western species differ little from the eastern. These birds seem to say, *Witch-i-ty, witch-i-ty, witch-i-ty*, much as do the others, there being, perhaps, a different quality to the tone, yet it is unmistakably Yellow-throat language. Dawson gives other notes for the Western Yellow-throat as *Réesiwitte*,

réesiwitte rít, and *chitooréet*, *chitooréet*, *chitooréet*, *chu*, reminding him of the Kentucky Warbler.

In southern California the Pacific Yellow-throat is a common resident bird, being found winter or summer in his chosen haunts. This western bird is not at all shy, foraging about in the bushes close beside the watcher, lighting upon a bit of *débris*, or growth, in the water where his beauty may be fully enjoyed, and going about his everyday affairs, once his curiosity as to your business has been satisfied.

In the winter-time these birds often come up to my bird table and help themselves to the suet and other dainties.

In a little canyon not far from my home I once came upon a pair of these birds that were carrying food into a clump of rank, broad-leaved grasses. This vegetation grew in a depression which after the winter rains was the bed of a small stream, but at this time in June was practically dry. At first the birds protested mildly at our presence but were soon busy at work and the noisy calling of the young, when fed, made locating them easy. Parting the grass, which was as tall as my head in places, we found one of the prettiest nests I have ever seen. It was about two feet from the ground and was fastened onto the brown reeds, much as a Red-wing Blackbird nest, or that of a Tule Wren would have been. The structure itself was entirely made of the same coarse brown reeds. No other material was used and there was no lining. This I did not know until later, for the nest was filled with four tiny, yellow-mouthed (not throated) nestlings. It was a deep nest and the little birds fitted into it so snugly that movement, for anything but their long wobbly necks, was impossible. Seldom have I seen so tight a fit in the bird world as in this little nest.

As I sat and watched the parents feeding I thought

what a safe place they had chosen. It was where no boy would be apt to notice it and there were no prowling cats to devour; but, alas, I had not then reckoned with the worst enemy of these birds.

When two days later I returned with my camera in hopes that I might preserve that wonderfully pretty picture made by that neat, trim little nest and the four birdies I was filled with dismay to behold a long, speckled gopher snake coiled across the nest, where he was resting after having eaten the young. He wriggled away when I parted the grass and I was powerless to end his existence, but if thoughts kill, his life was a short one. I fear me, however, that it may have been this same monster who later ate my baby Towhees farther down the same canyon. With that slippery reptile and his companions at large it is a wonder that any of our ground birds escape.

GENUS ICTERIA: LONG-TAILED CHAT.

Long-tailed Chat: *Icteria virens longicauda*.

FAMILY—WOOD WARBLERS.

THE largest member of this interesting family is so different in actions from his modest, well-behaved cousins, as to make one doubt his relationship.

And yet, in structure and plumage he is quite evidently a Warbler. This happy-go-lucky clown of the bird world is known as the Chat, the eastern member being the Yellow-breasted Chat (*Icteria virens virens*), and the bird ranging from the Great Plains to the Pacific being the Long-tailed Chat.

In plumage and ways the two birds differ little, being about seven and one-half inches long with plump bodies. The upper parts are an olive-green which is quite incon-

spicuous; a white line from bill to eye, white eye-ring and another white line at side of head below eye, these markings filled in with a black line which extends back from the bill, are noticeable as the bird peeks out at you from some concealing thicket; but the thing that makes these Chats beautiful is the brilliant yellow throat, breast, and belly which become white next the tail. Female similar. Beautiful birds they, indeed, are, and one considers that day a red-letter one on which one of them was seen or heard.

While with most of the Warblers the joy is in the seeing, their voices for the most part being weak, this is the grand exception which proves the rule, for the Chat is more often seen than heard, at least in the case of the eastern bird. From my observations of the westerner I am inclined to think that he is not so much of a recluse as his cousin, since never have I found them hard to see, when their loud calls had proclaimed their presence. On one occasion a party of bird students sat and watched a glorious male come repeatedly to a near-by picnic table, onto and under it, for the crumbs scattered about. He seemed not to mind in the least the glasses leveled upon him.

The picnic grounds, which were in southern California, were shaded with large sycamore and live-oak trees, and skirted a little stream whose banks were over-grown with a tangle of bushes and vines, just such a place as the Chats choose for a summer home, for they are summer residents, only, in most of their range.

They were not the only birds that were enjoying this sylvan spot for the little House Wren had her hole in a dead limb, a Red-shafted Flicker peeked forth from a hole in a sycamore, while gorgeous Tanagers, dull Wood Pewees, Vireos, and smaller warblers filled the trees.

However, the Long-tailed Chat had proclaimed his presence in a medley of vocal utterances and we had turned a deaf ear to all other sights and sounds, since

the Chat was a novelty where many of the others were common occurrences.

Although the Chat imitates other birds, his song can never be mistaken for anything else. To be sure, if only one part of it were heard the listener might pass along with the thought that some man was whistling to his dog, since to me the most beautiful part of this strange song is a clear liquid whistle easily imitated by a human. But the bird never stops with that whistle. Pausing for breath he gives an oriole note, or perhaps that of a Cuckoo or Magpie, or perchance, gives a gruff little bark not unlike that of a small canine. This song is not woven together as does the Mockingbird his medley, but is given in a measured way, with a pause between each change, so that it becomes a vocal performance, rather than a musical song. It is this method of singing that makes one always sure which bird is the guilty party.

The dwellers of the south lands, east and west, know that the Mockingbirds sometimes sing all night. Few other species do this, but our rollicking jester sleeps not, and to drive away dull care he pours forth his disconnected lay.

It is known that the Oven-bird has a twilight flight song and that the Yellow-throat sometimes indulges in singing while on wing, but the Chat gives a performance which is unique in the Warbler world and has made him famous.

Leaping from some high perch he flutters upward, his head thrown back and his long legs dangling below. As he flies he pours forth his love-song to his listening mate below. When the highest point of his upward flight has been reached he pauses in air with wings beating rapidly and legs still dangling. Then the song dies away and he comes tumbling down in "aerial somersaults" until he is lost to view in the foliage. It is a sight never to be forgotten and is, I believe, as much appreciated by the human beholder as the lady-love for whom it is intended.

These birds build in an upright crotch of a low tree, or bush, in some thicket, placing the nest near the ground. It is a bulky affair made of dry leaves, roots, strips of bark, the inner part being made of fine grasses or rootlets and forming a nest within a nest.

Economically, this feathered clown is beneficial like others of his family since he lives largely on insects, including the alfalfa weevil, and the boll weevil, which is so destructive to cotton.

GENUS WILSONIA : WILSON'S WARBLER. (Eastern.)

Wilson's Warbler: *Wilsonia pusilla pusilla*.

FAMILY—WOOD WARBLERS.

THIS gay little bird is a North American species which breeds from the tree limit in northwestern and central Mackenzie, etc., south to northern Minnesota, New Hampshire, Maine, and Nova Scotia; wintering south of the United States, and migrating mainly along the Alleghenies.

They are beautiful, plump little things that are scarcely five inches in length, so brilliantly colored and so friendly in their ways, that we cannot but regret that they are not more widely distributed. We rejoice that their place is filled in the west by two subspecies which closely resemble them.

Seen from below it seems to be just a bright yellow bird, but once it has dropped to a lower plane, or turned its head so you can catch a glimpse of the crown, you will see that it is adorned by a black cap, which has given it the name of Black-capped Warbler. The upper parts are a bright olive-green, the wings and tail without markings, and the bright black eye, ringless.

The flycatching habit of this group has given them the name of Flycatching Warblers, and is helpful in identification. One often sees one of these gay midgets fly out from a tree and hover, Hummingbird fashion, before some oak tassel, or other growth, inspect it, or feed. They also fly out into the open and circle back, but not to the same limb, as do the true Flycatchers. It also has a way of twitching its tail irregularly up and down. These habits will help to place the females and young where they belong, even though the black cap is restricted, or obscured.

During migrations the birds are seen in deciduous low growths along roadsides, in orchards, and in alder thickets, rather than in the mountains and hills.

The nest is a deep cup, rather well-built structure, made of dried grasses lined with hairs and is placed on the ground.

Thayer gives two common call notes: one a very fine, quick lisp, the other a low-toned and slightly harsh *chut* much like the Yellow-throat's commonest call, but easily distinguishable. The song, though low, is said to have the ringing clarity of the Canada's and Hooded's songs, the commonest form being a rapid, bubbling warble, of two nearly equal parts, the second lower toned and sometimes diminuendo, reminding Mr. Thayer of a Northern Water-Thrush song.

GENUS WILSONIA: PILEOLATED WARBLER.

Pileolated Warbler: Wilsonia pusilla pileolata.

FAMILY—WOOD WARBLERS.

THE Pileolated Warbler is a subspecies of the Wilson's and differs from it chiefly in being slightly larger

(four and one-half inches long), having the forehead *orange*, rather than yellow, and the rest of plumage deeper, and richer.

It breeds from Alaska through eastern Oregon and eastern California to mountains of New Mexico and western Texas; winters south to Panama; casual in Minnesota and Missouri.

In habits this bird seems not to differ essentially from Wilson's, except that it is recorded as nesting from ten inches to two feet from the ground in bushes or low evergreen trees, as well as directly on the ground.

Chapman records the song as given by Minot as *Chee-chee-chee-chee* (or this syllable repeated several times), thus different from their song as I recall it in the east. Certain low querulous notes are indescribable.

GENUS WILSONIA: GOLDEN PILEOLATED WARBLER.

Golden Pileolated Warbler: *Wilsonia pusilla chryseola*.

FAMILY—WOOD WARBLERS.

THIS subspecies is a bird of the Pacific coast, breeding on the coastal slope from southern British Columbia to southern California, being casual in migration in eastern Oregon and Arizona, and wintering south of our country.

It differs from the Pileolated in being smaller and a brighter yellow. To the casual observer they are alike.

In southern California it is one of the first Warblers to arrive, staying late in the fall, and sometimes all winter long. It and the Lutescents are the first to visit my garden, coming early in March, and rarely in Febru-

ary, the majority not appearing before April. Oftentimes the willow thickets, along a stream, are alive with these gay little Black-caps. They are not at all shy but paying no attention to any one, forage rapidly over brush and tree, keeping up a thin, sharp *chit* note. Sometimes I have heard them sing but, like most musical attempts of the family, it is chiefly interesting because it comes from the throat of so beautiful a bird. It is not a long strain and the last of it is a sort of guttural trill.

Like its western cousin, it nests a few feet from the ground in blackberry tangles, ferns, weeds, or crotch of tree, weaving a rather bulky nest, with compact inside.

GENUS ANTHUS: PIPIT.

Pipit: *Anthus rubescens*.

FAMILY—MOTACILLIDÆ: WAGTAILS.

IN the American Pipit we have an interesting bird which breeds in the United States only on the high mountains south to California, Colorado, and New Mexico; wintering from southern California and the Ohio and lower Delaware Valleys to the Gulf States.

The adults in winter plumage, which is the one usually seen, are a rich brown above, with a white line over the eye; the outer tail feathers white and the next one or two white-tipped. The upper part of wing has the feathers white, or buffy, tipped; and the under parts are buffy thickly streaked with brown. The length is about seven inches.

The Pipits, or Titlarks, as they are sometimes called, usually go about in loose flocks which scatter over plowed fields, meadows, pastures, or strip of beach as the case may be, but when alarmed fly away together, giving their shrill *pip-pip*, *pip-pip* call and often returning to their foraging ground.

Their way of *walking* rapidly about and their restless way of jerking the tail makes them easy to identify. In migrations they fly high in a slightly undulating flight, the shrill call note proclaiming their presence when they are not plainly visible.

During the nesting season the male Pipit has a flight song which is given both as the bird mounts as much

as two hundred feet into the air, and also as it descends. Townsend describes it as *che-whée*, *che-wée*, with a vibratory resonance on the *whée*.

Dawson says of the Washington birds: "The Pipit song in many of its phrases is strikingly like that of the Rock Wren. It has the same vivacity and ringing quality, though perhaps less power, and the similarity extends to the very phrasing. An alarm note runs *pichoo pichoo pichoo*, given six or seven times, rapidly and emphatically; while another, *wee üch*, *wee üch*, *wee üch*, is rendered, unless my eyes deceive me, with the same springing motion which characterizes the Wren. An ecstasy song of courting time (heard on Mt. Rainier) runs *twiss twiss twiss twiss* (*ad lib.*), uttered as rapidly as the syllables may be said. It is delivered as the bird describes great, slow circles in mid-air; and when the singer is exhausted by his efforts, he falls like a spent rocket to the ground."

One peculiarity the bird has which can only be seen when close at hand and that is the hind toe nail, which is as long as, or longer than, its toe.

GENUS CINCLUS: DIPPER OR WATER
OUZEL.

Dipper or Water Ouzel: *Cinclus mexicanus*
unicolor.

FAMILY—CINCLIDÆ: DIPPERS.

IN the Water Ouzel, or Dipper, we have a bird that is distinctively western and absolutely unique in plumage and actions. It is a dweller in mountain canyons where cataracts and crystal streams rush downward, breeding from near timber limit in northwestern Alaska south to northern Lower California and southern New Mexico; accidental in the Black Hills, South Dakota, and western Nebraska.

The bird is about seven inches long and is chunky, having a short, slender, compressed bill; the wings short, stiff, and rounded; the tail shorter than wings, and the claws strongly curved.

The adults in summer plumage are a nearly uniform slate gray, which is a trifle lighter below, the head and neck being faintly tinged with brown. The yellowish feet and the white eyelids, which show as the bird winks, are the only relief in this somber costume. In winter the old birds have the feathers of wings and under parts slightly tipped with white. The young resemble the winter plumage of adults, having the under parts tinged with rusty and somewhat more of the white.

Not only does this dull coloration blend perfectly with the rocks, dead timber, and dark shadows of the mountain canyons where this bird makes its home, but the compact form and fine water-proof plumage enables it

to get its living from the streams where it lives. Its manner of obtaining this insect life is not by skimming over the water, or gathering it from the edge of the stream, but with utter abandon this bird midget plunges into the swiftest current and *walks on the bottom* of the stream, oftentimes going *against* the force of the water, at that. This feat seems almost too marvelous to be true, but when Mrs. Olive Thorne Miller, in her "A Bird-Lover in the West," tells of the Ouzels' wonderful ability of walking through the swiftest eddies, we must believe. John Muir, in "Mountains of California," also tells of this bird.

Its manner of bending the leg and bobbing up and down has given the name Dipper.

The nest of these queer birds is a bulky ball with an opening at one side. It is made of green moss and placed on a ledge, among the rocks, in an upturned root, always near water, and usually under a cascade where the spray can reach the nest and keep the moss green.

In the bird's way of poking about in crannies, rocks, and dark places it has been likened to a Wren. And, too, its loud, clear, vivacious song somewhat resembles that family. Mrs. Miller speaks of the song as being exquisite and quite in harmony with the melody of the stream. Dawson, in his "Birds of Washington," gives an interesting account of the actions of the Ouzel and gives *jigic, jigic, jigic* as "certain gruff notes of greeting" given by the bird as it viewed him from its station on a jutting rock.

While the Ouzels are resident in the greater part of their range, when the streams become frozen they go farther down the canyons, and according to Mr. Batchelder sometimes swim down stream under the ice. Marvellous birds they, indeed, are. In southern California they are reported by a reliable authority as *singing* at Christmas time.

In *The Condor*, volume twenty-seven, Harold C. and Amy M. Bryant report finding an Ouzel's nest in Placer County, California, on August 5, 1914. They tell us that "a waterfall about fifteen feet in height tumbled over a rocky ledge at this point into a fine large pool of clear water, which was surrounded, on all but one side, by perpendicular walls of rock. We were not surprised, therefore, to find, on investigation, a Water Ouzel's nest built in a cleft of the rock about two feet from the falling stream of water. The moss of which the nest was built had formerly been kept green by trickling water, but at this date had begun to turn brown. . . . On approaching the nest, one of the occupants, a well-fledged Water Ouzel, fluttered from the entrance and dropped down into the pool of water below. Here it immediately dove and swam for a distance of six feet or more and at a depth of about two feet below the surface of the water. Quick, short strokes of the wings enabled the bird to swim rapidly in this medium.

"A moment later a second bird flew from the nest. This one, unlike the first, did not dive, but swam about on the top of the water, using its wings in the same manner, however. Still another young bird remained in the nest, but repeated attempts to dislodge it failed." This account of the actions of the young birds is extremely interesting, making the readers wish this opportunity might have been theirs.

One May in the Sierra Nevada Mountains, Tulare County, at the Hot Springs, an opportunity came to me to watch these unique birds, and to even find a nest.

Hot Springs is within the boundaries of the Sequoia National Forest at an elevation of 3,200 feet. It is located on Deer Creek in a rather narrow canyon, divided by the stream and hedged in by steep, wooded, brush-covered sides. It is a beautiful place in spring-time, the hillsides being a mass of wonderful wild flowers,

flowering trees and shrubs, which latter harbor countless singing birds. The stream adds not a little to the attractiveness, being a typical mountain one with clear, rapid water forming cascades over a stony bottom.

Our cabin was right beside this stream, and from its porch I watched the antics of the Water Ouzels as they foraged for their young. Early in the afternoon of May 15th, as I sat expectant, an Ouzel appeared at the farther edge of the stream (perhaps twenty-five feet away) where the water was protected by a boulder and comparatively quiet. It was to me most thrilling to see this little gray bird deliberately dive into this deep bit of water, entirely disappear and remain for several seconds before it came into sight again. This it did by flying straight up out of the water where there was considerable current, and about two feet from where it went in. Then lighting on a rock in the midst of the cascades, it looked about before jumping to another rock and walking about in the shallower part of the stream. As it came up black objects were visible in its bill. Again the bird pitched off, head first, into the bubbling cascades, this time sort of floundering about underneath in a place shallow enough so that I could catch glimpses of it. It looked as if it were using its wings in its upward progress against the stream.

After that this, or another bird, was seen in the water near the cabin, or flying like a winged-bullet up stream. Only once did I see a bird fly down stream, and then only for a short way before it lighted to forage.

About four o'clock I went up to the bridge where the birds had been seen preening on a rock to try and locate the nest.

Just above the bridge was quite a fall of water and half the stream-bed was filled by a big rock, beneath which I felt would be an ideal place for a nest, for it was damp and showered by the spray. But none was in

sight. However, as I watched I heard the noisy squeal of young birds and caught a glimpse of a dark object against the stony wall that rose perpendicularly above the water. Surely there could be no nest in that bare wall of seemingly solid rock? But as I marveled an Ouzel flew up to a small round hole, poised a moment on the edge, and darted away, followed by the noisy, squealing calls of young.

In the first five minutes of watching, the birds fed five times. In twenty minutes they fed fifteen times, making an almost continuous performance. There seemed to be no particular method in the feeding, both birds flying up and down stream, sometimes darting directly away from the nest on a foraging trip, and at other times resting for a moment on the big rock near the fall, or on a smaller one in mid-stream below the nest. They never tarried at the nest-hole, but poised long enough at the edge to feed, then were away.

I have always supposed that the Ouzel built where the spray touched the nest, but I do not believe that it reached this one, although I could get no nearer than the footbridge, about fifty feet above.

I could see that the water dashed against the opposite wall far below the nest but, so far as I could see, it did not go across and up to the nest. The stream, as I stepped it off on the bridge, was not more than twelve or fifteen feet wide. The rocky wall must have been seventy-five feet high, having shrubs and trees at the top, with a few flowers and bushy growths to one side and not far above the nest. A part of the wall where the sun never reached was moss-covered. The nest was seemingly in solid rock, there being no visible depression in the surface at that place. It was surrounded by moss and just above it grew a small bunch of grass which was about three inches high and had red upper tips, or perhaps tiny flowers. This helped me to locate the nest-

hole, which was about ten feet above the water. It was in the safest place imaginable. No water snake (I had watched one near the cabin), other bird, or human could molest it, I felt sure.

The young were so noisy that I hoped that I might catch a glimpse of them, but though I strained my eyes through the glass, I could make nothing out. Yet the fact that the old birds just poised at the edge of the nest, proved that the young must have been near the front. A part of the time the sun shone feebly on the hole, but it was not enough to be of any assistance.

The Water Ouzel is said to have a fascinating song and my chief regret is that I did not hear them. I feel sure that they were so busy feeding the young that they took no time for song. I shall hope at another time to come upon them in their singing season. That I still have to look forward to.

FAMILY—MIMIDÆ: THRASHERS, MOCKING-
BIRDS, ETC.

IN this family we have some fifteen species and subspecies of birds which are dull plumaged, the sexes being similar. While some of them come freely about the gardens, others frequent low, bushy growths in open canyons or woodlands, and still others are dwellers of the sage-covered deserts. Most of them mount a bush, tree, or post to sing, but they are as a rule birds of the ground, where they *run* along in moist places and under cover. The legs are long and strong, the bill large and in some cases much curved, the tail is also long and carried well up.

Certain members of this family—notably the Mockingbird—are famous singers, and none of them lack in musical ability.

Formerly the Wrens were placed in this family, but the latest classification has given them a family by themselves.

GENUS OREOSCOPTES: SAGE
THRASHER.

Sage Thrasher: *Oreoscoptes montanus*.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

THE Sage Thrasher is one member of this family that is found only in the arid sage-brush plains and the foothills of the western United States, breeding from

central Montana, west to the Cascades and Sierra Nevada; and from western Nebraska south to east central California and northern New Mexico, wintering from southern California and mountains of central Texas, south.

It is about eight inches long and its general plumage is ashy-brown, the under parts slightly lighter and the upper parts indistinctly streaked; the wings, which are of equal length with the tail, have two narrow white bars, and the tail has the inner web of two to four outer feathers, tipped with white; the breast and sides are heavily marked with black spots. The young birds are browner, with the streaks above more pronounced and those below less distinct.

The nests are usually placed in sage-brush or greasewood and are bulky structures made of coarse plant stems, thorny twigs and like material, lined with fine fibers and strips of sage bark, and horsehair, being sometimes partially domed.

True to family traits this bird is a fine singer. Mounting a sage bush, or sometimes a pole, if perchance these symbols of civilization have invaded his domain, he pours forth his matchless strain long after dark. Sometimes, too, like the Mockingbird, he sings on moonlight nights. But unlike the song of the gray minstrel which is sung in a thickly settled neighborhood oftentimes to the disgust of the would-be sleeper, who is disturbed by it, this Sage Thrasher might be said to waste his sweetness on the desert air, as seldom does he have a listener in the arid regions he has chosen for his abiding place.

GENUS MIMUS: WESTERN MOCKING-
BIRD.

Western Mockingbird: *Mimus polyglottos*
leucopterus.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

PROBABLY no bird of the United States is so well known as the Mockingbird. While many there are who have never seen the bird, because of his marvelous vocal powers his fame has spread the world over.

The Mockingbird is a dweller of the southeastern part of our country, ranging from eastern Nebraska, southern Iowa, Illinois, Indiana, Ohio, and Maryland south to eastern Texas, southern Florida; sparingly to New York and Massachusetts.

In the southwestern United States a similar bird is known as the Western Mockingbird. This bird breeds chiefly from central California, southern Wyoming, northwestern Nebraska, and western Kansas, south.

These birds are long, slender, graceful creatures, that measure about ten and one-half to eleven inches, the tail being nearly half the length of the entire bird. It is, also, the most expressive thing about him, being carried well up and used in emphatic jerkings to accentuate his varying moods. The upper parts are a light gray, the under plumage being a soiled white; the wings and tail are black, the former having a large white patch which shows conspicuously in flight, and resolves itself into one or two wing bars when closed; the latter having the two outer feathers white, and in the eastern species the next two feathers have white tips. The tail is slightly rounded and white, which shows only below when closed, flares forth when the bird flies and is a good distinguishing mark. The female has the wing patches slightly

smaller but is not easily differentiated from the male. The young birds have white breasts which are much bespecked with brown.

This bird, which is not only a real *mocker* of other feathered life, is also a tease and a scold as well as a jolly good fellow. Being extremely sociable in disposition he chooses the cultivated valleys and the city gardens for his home rather than the solitude of the mountains, and in most of his range he may be seen and heard throughout the entire year.

Although the Chat has been called the *clown* of the bird world, surely his actions are not more spectacular than are those of the Mocker when he is feeling his best. From the top of the highest available pole, chimney-top, or the tip-top branch of the highest tree, he pours forth his soul in ecstatic rapture. So full of the joy of life is he that every few minutes he leaps several feet into the air, and still singing, comes tumbling down again to his perch. I recall no other bird in the west that so expresses its delight.

One summer I saw a singing Mockingbird leave a hillside and fly into the top of a tall tree which grew in the valley below. After singing from this high pinnacle for a few minutes, he flung himself into the air, and with legs dangling, wings flapping as if on pivots, he came tumbling to earth like a dead leaf, all the time singing like mad. Just before reaching the ground he caught himself, flew into the tree, and stopped singing. It was, indeed, a marvelous exhibition of what is sometimes called the *dropping song*.

A pretty attitude in which this bird indulges is to pause on the ground, or sometimes its perch, and raise its wings high above the body like a huge butterfly, thus exposing the big white patches. Two or three times the bird will raise and close the wings in this graceful way. Not only at the courting time is this movement indulged

in, but at other times as well and when no other bird is about.

The courting dance of two birds is, also, most interesting. With heads stretched up to full length of neck, tail well raised, the performers face each other. Then begins a series of chasséing back and forth, not unlike human beings in an old-fashioned dance. The manner of their prancings is varied but they always face each other and stay near together, occupying only a small circle in their movements.

If one may judge by the actions of the Western Mockingbird he feels that he is rightful lord of all he surveys, and accordingly oftentimes bullies his smaller companions of the garden by driving them from the bird table, even when he himself is not hungry; or belligerently drives from the grounds a strange bird that enters his domain. At such times a harsh scolding note is used by both birds—a sort of *scrat*, loud, but guttural. This same note announces the presence of a cat and tabby is forthwith driven from the grounds, both birds flying down upon her with great swoops, attacking her from the back and picking her so that she is glad to flee.

One cannot feel sorry for the cat when one knows that far too many of the young Mockingbirds are eaten by one of her tribe, the nestlings having a way of leaving the nest when they are only nine or ten days old. Though they are well feathered and their feet and legs are well developed, they are unable to fly and instead of staying in the vines where they would not be quite so great a temptation to tabby, they usually tumble to the ground and, although they can hop with wonderful agility and often try to hide themselves at the clump of some bush, they are no match for the prowling feline.

And, too, the birds are fond of nesting in vines against the houses, in bushes, and low trees, so that many of the nestlings never live to be large enough to leave the nest.

Can we wonder that the birds are vindictive toward any cat they see?

The nest is a loosely-constructed affair made of twigs, strings, coarse grasses and a finer lining of fibers, cotton, etc. Both birds help at the building, although the female does the most of it, as well as all of the brooding, leaving the nest when she wishes food. But the male is a devoted parent and works hard to feed his offspring. Any one doubting the economic value of these birds need only to watch the long worms, moths, spiders, and various other insects, that are brought to the nest. The young are the noisiest of bantlings and even when as large as their parents keep up a whining, complaining *peep*, which brings the indulgent parent with another worm.

Students of bird life have found that individuals of a species often vary in their songs, some excelling others. And so it is with the Mockingbirds. Some there are that are marvelous imitators while others are more mediocre, using their own warbling song but doing less real *mocking*.

In Southern California the birds sing for the most of the year, resting during the fall moulting season, although even in September they may be heard.

At the nesting season, which stretches over many months, they sing night and day, causing me to wonder if they never stop to eat. Loud and clear the notes pour forth so that they may be heard blocks away. With the perfume of the orange blossoms filling the air, the moonlight flooding the earth, and the gray songster singing as though his life depended upon it, the person who does not feel that after all life is worth while, surely needs our commiseration.

Not only does this rogue so perfectly mock the call of the chicken in distress that many a tired farmer has dragged himself from bed to see what was troubling his fowls, but he so repeats the calls of the wild birds about

him that many a bird student has been led on a wild goose chase. I have sometimes thought that one might trace the coming of a new bird into the neighborhood by the song of the Mocker. It seems to a great extent to be "out of sight, out of mind" with him for when the winter birds are about he mimics their notes and when the summer birds return he is soon weaving their notes into his song.

To me he is a marvelous performer and mocker as well as a sweet singer that we do not care to lose.

GENUS TOXOSTOMA: CURVE-BILLED THRASHER.

Curved-bill Thrasher: *Toxostoma curvirostre curvirostre*.

FAMILY—THRASHER, MOCKINGBIRDS, ETC.

THE other birds belonging to this genus are dwellers of the southwestern desert regions and are, therefore, not so well known as their eastern cousin.

The Curve-billed Thrasher is found from southeastern New Mexico, Rio Grande Valley, and southern Gulf coast of Texas, south. It is ten and one-half or eleven inches long and the upper parts are a light brownish-gray; the tail is black with the four pairs of outer feathers white tipped; there are two white wing bars; the throat is white, and the breast and sides are spotted and clouded with gray. The young are similar but the markings on under side are narrower and the wing coverts and rump are tawny.

These birds build their bulky nests in cactus, yuccas, and thorn bushes of their chosen habitat, and seem not to be particularly shy of the humans in their domain.

In west central Arizona and southwestern New Mex-

ico, south, on the cactus deserts and up to 3,000 feet, is found the Palmer Thrasher (*T. c. palmeri*), a subspecies of the Curve-billed. It differs from the other in having its markings less distinct. The wing bars are paler, or wanting; the tail is tipped with *lighter*, instead of white, and the under markings are indistinct. Both birds have curved bills.

GENUS TOXOSTOMA: BENDIRE THRASHER.

Bendire Thrasher: *Toxostoma bendirei*.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

ANOTHER desert species which is locally a common resident in southeastern and northeastern Arizona, wandering to southeastern California, is known as the Bendire Thrasher.

Harry S. Swarth in his list of the Arizona Birds says that our present knowledge seems to indicate an exceedingly irregular and disconnected range. In southeastern Arizona it is very abundant in the valley of the Santa Cruz, west of the Santa Rita Mountains, while it is almost unknown east of that range. It is common in the plains and valleys stretching northwest of Tucson, as far as Phoenix and along the Gila River at least as far as Gila Bend.

An injured bird of this species was once found in Los Angeles, toward Pasadena, and just how the bird happened there is still a mystery.

This Bendire Thrasher is more like a Mockingbird in shape, bill, and eye, than any bird I have seen. Where the Mocker is *gray*, this bird is a light *tan* and his bill is slightly more curved, but the expression of the eye is the same. The Cholly cactus is a favorite nesting place.

GENUS TOXOSTOMA:
SUBGENUS HARPORHYNCHUS.

CALIFORNIA THRASHER

California Thrasher: *Toxostoma redivivum*.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

PROBABLY the best known of the western Thrashers and the one most nearly resembling it in habits, though quite different in plumage, is the California Thrasher which is found in the valleys and foothills of the State whose name it bears west of the Sierra Nevada, breeding from Shasta County to Lower California.

It is from eleven to thirteen inches long and the prevailing color is a dull brown which is lighter below and tawny under tail. There are no wing bars. The tail is long and carried well up as is the habit of this family; the legs are long and stout and the bird runs, rather than hops. But the distinguishing thing about these birds, which are similar, is the long, much-curved bill which is unlike anything else.

In color and habit of keeping much to the ground, one might mistake the California Towhee for this bird as it flits through the underbrush, but one glimpse of the bill forever settles the identity.

Like its eastern cousin it is fond of moist places and dense thickets in canyons and along streams, but frequents gardens when they are near its chosen haunts, running about under the trees and shrubbery unmindful of the proximity of mankind.

The novice might easily mistake the song of the Thrasher for that of the Mockingbird, but its tones are richer and sweeter. It is something of a *mock*er, the three-note falsetto call of the Valley Quail being one of

its attempts as well as the *ja-cob*, *ja-cob*, *ja-cob* of the California Woodpecker, and the call of the Jay. The common call note is a low *chuck*.

They are resident birds in most of their range and in southern California nest early. I once found a nest in March which contained one fully feathered young. Joseph Grinnell reports a set of three eggs which he found the fifteenth of December. At this time the male mounts the top of a tall shrub, or some bare branch and there pours forth his sweet song. It seems a little strange to hear this music coming from the long curved bill. It is a song that carries well and often from across the canyon it is wafted on the breeze when the bird is out of sight.

A few years ago a pair of these birds came into a yard on the outskirts of Los Angeles on the Arroyo Seco bank and built their nest about ten feet from the ground in a buckthorn bush that grew over a trellis close beside the house. This family had for some time kept suet, bread crumbs and water out for the birds, which undoubtedly accounts for their leaving their usual nesting place and coming to this thickly settled locality.

It was the twenty-seventh of March when I began watching this nest and the birds had been brooding for fully a week. During the following three weeks I made almost daily trips to the nest and learned many interesting things about these Thrashers.

I learned that both birds brooded the eggs, each staying on the nest until the other one came into the bush, when the brooding bird slipped off quietly and stayed away from ten to twenty-five minutes; that one of the pair quite frequently approached the nest from the ground and ascended from twig to twig as is the way of its eastern cousin; that about the only note given was a low *chuck*, which both birds used occasionally, the male evidently being too busy to sing. I also found out that

while the adults fed to some extent by regurgitation, they also fed the newly-hatched young fresh food, such as brown worms.

This fact in regard to the feeding was the most astonishing thing that I found out about them. When the nestling was a day old one bird appeared in the vine with a long brown worm in its bill. Standing over the nest it ran the worm back and forth in its bill, then stooped down as if feeding the young. When the bird raised its head it still held the worm, or a portion of it, and I wondered if the young had managed to swallow a part of it, or was the parent feeding it the essence of worm? The next day one bird fed a small grub and the other one brought another inch-long worm which it tried to feed, then swallowing it itself.

When the nestling (there proved to be only one) was fourteen days old I found it beside the nest preening itself. It was fully feathered but the tail was short and the bill not yet curved. In color it resembled the old birds. Though not able to fly, its large legs enabled it to run over the ground at a rapid pace. Its note was *whit* or *te-whit*.

From the actions of the adults it was evident that they intended to raise another brood, for the male was again singing from the house top, and the female was shaping and picking at the old nest, and would not allow the nestling to cuddle down beside her as he wished to do and thought was his right. However, the second brood was not raised in this nest as something drove the birds away.

It was quite evident to the watcher that these big brown western birds were helping rid that garden and neighborhood of noxious insect life and fully deserve the protection accorded them.

SUBGENUS HARPORHYNCHUS:
LECONTE'S THRASHER

Leconte's Thrasher: *Toxostoma lecontei lecontei*.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

IN THE desert regions of southern Nevada, southwestern Utah, and southern California, south, is found the Leconte's Thrasher, a bird having lighter plumage to blend with his habitat, the sun-baked desert. Here the birds live in the chaparral, seldom flying but keeping on the ground where they hide behind the brush. Vernon Bailey says that they outrun a man and if followed soon disappear, going with head low and tail straight out behind like a Roadrunner, keeping always on the far side of each bunch of bushes. Like the rest of their tribe they are enthusiastic songsters and pour forth their lay from the top of some bush, adding life and joy to the hot, dry places where they dwell.

SUBGENUS HARPORHYNCHUS:
CRISSAL THRASHER.

Crissal Thrasher: *Toxostoma crissale*.

FAMILY—THRASHERS, MOCKINGBIRDS, ETC.

ANOTHER desert bird which is found breeding from southern Nevada and Utah to Lower California, and from southeastern California to western Texas, is the Crissal Thrasher. It is fond of the low junipers and mesquites in the rough sides of rocky canyons. It may be distinguished from other desert Thrashers by its white throat and malar stripe. The rufous under-tail coverts have caused the bird to be called the Red-vented Thrasher. The bill is long and much curved.

FAMILY—TROGLODYTIDÆ: WRENS.

WHILE the mention of this family will, to most people, recall vividly the small brown House Wren which is so friendly throughout the eastern United States, according to the A. O. U. Check List there are about forty species and subspecies in this country. They are mostly small dull-colored birds having long tails which they carry well up, oftentimes tilted over the back. Their bills are long and in some species slightly curved. They are active birds that are wont to scold in loud harsh tones when excited, but have musical songs that are given with a gusto that enliven the entire neighborhood where they dwell, be it brush-covered hillside, woodland thicket, dooryard, marsh, canyon, rocky ledge, or cactus hedge. They are expert builders, sometimes constructing a large bulky affair and sometimes a small compact cup, and they are not believers in race suicide; at least, the large sets of eggs and the big broods that are brought forth would lead us to believe otherwise.

GENUS HELEODYTES: CACTUS WREN.

Cactus Wren: *Heleodytes brunneicapillus couési*.

FAMILY—WRENS.

IN THE dry sandy washes and deserts of the southwest where grows the cactus is found the most un-Wren-like member of the family, the Cactus Wren. Its range is from Ventura County, south, in California, southern Utah, Nevada, Arizona, New Mexico, and Texas. It is

a resident in most places found, although most abundant throughout the summer.

The adults are eight or nine inches long and are more gray in tone than most members of the family. The upper parts are brown heavily streaked with black and white; there is a white line over the eye, the middle tail feathers are brownish spotted with black, the others are black, the outside one being barred with white; the white throat and breast are marked with black roundish spots, and the belly is buffy brown. Altogether, it is a handsome bird that easily attracts attention in its chosen haunts, the cactus thickets of the desert or the dry barren washes where these plants and the yuccas grow.

Mrs. Bailey gives the call as a monotonous *chut, chut*, but says that its manner of singing from the top of a bare branch with head up and tail hanging is like that of the Carolina Wren.

Aside from their size and coloring probably the most interesting thing about these Wrens is the nest they build. It is an immense affair which is often ten or twelve inches long, is flask-shaped and placed on its side in a cactus, yucca, or thorny bush, the small round opening being at the mouth of the flask. The outside is made of sticks, straws, fibers and like material, and the inside is lined with feathers, some of which sometimes protrude from the opening. Usually there will be several of these queer nests in one cactus hedge, or thicket, and it is believed that the birds sleep in them.

One cannot help wondering if the baby birds never get impaled on the thorns of their unusual home-site, but so far as prowling snakes are concerned one may rest quite content and feel that the nestlings are quite safe from their ravages.

In San Diego County (California) and south a similar bird is called the Bryant's Cactus Wren. The chief difference is in the tail feathers, the middle ones being

somewhat barred. The ordinary bird student, however, will be pleased enough to find a Cactus Wren without bothering about its fine points.

GENUS SALPINCTES: ROCK WREN.

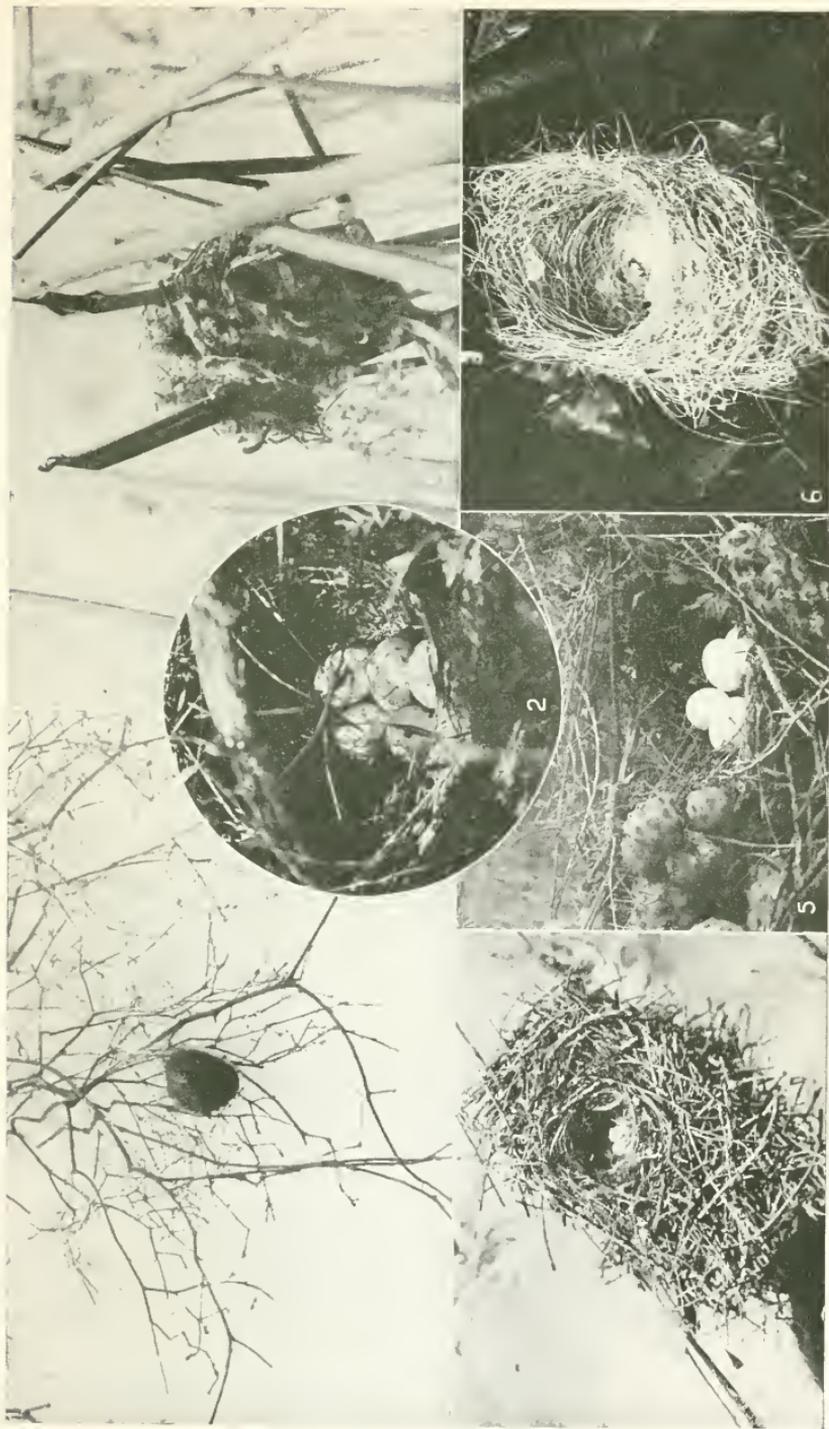
Rock Wren: *Salpinctes obsoletus obsoletus*.

FAMILY—WRENS.

IN THE Rock Wren of the west we have another interesting bird whose nest is often more inaccessible than is that of its cactus-dwelling relative, for although there are no spines to be dealt with, there often is a precipitous wall to scale before the home of this dweller of rocky canyons and mountain sides can be found. And then, when you think you have located the nest by the tufts of grass and sticks protruding, the chances are it is only a dummy made to deceive just such as you, and not the real home at all, for like others of the family, the birds are fond of building several nests. Dawson tells us that the approaches to these cavern nests are lined with pebbles of basalt, some of which are an inch or more in diameter. Since the bird is not more than six inches long itself, one cannot help wondering how it managed these large stones.

This Wren breeds along the length of the Pacific Coast and on the near-by islands, extending east to western North Dakota, central Nebraska (casually western Iowa), and central Texas; wintering in the southern part of its United States range.

The bill is as long as the head and it is slightly decurved at the tip; the wings are longer than the tail, which is rounded; the under parts are a dull white which becomes brownish on flanks; the sides of head, throat, and breast are finely marked with brown; the dull brown



1—NEST OF BULLOCK ORIOLE. 2—NEST OF MEADOWLARK. 3—NEST OF TULE WREN. 4—NEST OF HOUSE WREN.
 5—NEST OF ROAD-RUNNER. 6—NEST OF ARIZONA HOODED ORIOLE.



1—NEST OF CACTUS WREN. 2—CAÑON WRENS.

upper parts are finely streaked with black and white spots; the rump is a light brown. The most distinctive thing about the bird is its tail, the middle feathers of which are brown barred with black; the rest of the feathers are tipped with a broad cinnamon-buff band which margins a black band which shows conspicuously when spread. The outer pair of feathers are also barred in black and cinnamon-buff. In the young birds the upper parts are rusty gray; under parts whitish but becoming brownish on flanks and under tail coverts.

Dawson says of this bird's song that it is one of the sprightliest, most musical, and resonant to be heard in the entire west. The rock wall makes an admirable sounding board, and the bird stops midway of whatever task to sing a hymn of wildest exultation. *Whittier, whittier, whittier*, is one of his finest strains; while *ka-wee, ka-wee, ka-wee* is a sort of challenge which the bird renders in various tempo, and punctuates with nervous bobs to enforce attention. For the rest his notes are too varied, spontaneous, and untrammelled to admit of precise description.

GENUS CATHERPES: CANYON WREN.

Cañon Wren: *Catherpes mexicanus conspersus*.

FAMILY—WRENS.

IN THE Great Basin and Rocky Mountain regions from eastern California, Nevada, and southeastern Colorado south to Lower California, and in western Texas, south, is found the Cañon Wren, a bird about five and one-half inches long and a frequenter of rocky canyons where its wonderful song peals forth loud, clear, and liquid, given rapidly in a descending scale and ending in a little flourish back up the scale again. To me it is

one of the most inspiring of bird songs. Perhaps the fact that it is often heard in the solitude and grandeur of the mountains may account for this feeling, but it is, indeed, a wonderful song.

This little Wren is brown save for the white throat and breast; the upper parts are finely spotted with blackish and light markings, save the tail, which is crossed with narrow black bars; the belly is a dark rusty brown; the bill is long and slightly curved. The young are similar but usually lack the whitish spots on upper parts, and the lower under parts are mottled with dusky rather than specked.

In their southern range the birds sometimes come about the gardens, build about old buildings, not unlike the House Wren, but their musical notes belong to the mountain canyons, rather than the abodes of man. They are not, however, afraid of human beings. Miss Mary Mann Miller tells of one of these Wrens that came under the floor of her tent in the camp on Mt. Wilson and searched for insects, occasionally giving its wonderful song as it foraged. It seemed absurd that this wild song which one associates with the solitude and grandeur of the mountains should issue from beneath a floor.

Though this little bird nests in crannies and crevices of rocks, on ledges in caves, etc., in this respect resembling the Rock Wren, the black banding and light tip of tail of the latter birds make them easily identified.

A Wren which differs from the preceding chiefly in being smaller, having shorter bill, and being more thickly spotted on the back, is called the Dotted Cañon Wren.

GENUS THRYOMANES: VIGOR'S
WREN.

Vigor's Wren: *Thryomanes bewicki spilurus*.

FAMILY—WRENS.

THE friendly Bewick's Wren of the east is not found on the western coast but it has six subspecies that closely resemble it. The Vigor's Wren occupies the coast region of middle California, from Sonoma County to Monterey. A similar bird which is also spoken of as Vigor's but which is listed as the San Diego, or Southwest Bewick, is found in the Sacramento and San Joaquin valleys and adjacent foothills; north to Shasta County, and in the coast region of southern California, south, and on Santa Catalina Island. These birds are about five and one-half inches long and the upper parts are a dark brown, a white line over the eye being a conspicuous marking. The middle tail feathers are slightly lighter than the back, and are barred with darker; the outer tail feathers are blackish and are striped and barred; the under parts are gray with flanks and sides tinged with brown. The San Diego Wren differs from the other form chiefly in having the outside tail feathers tipped with gray, the outer web barred with dingy white, and the under tail coverts heavily barred with black. It is, however, only the scientific student who will care to differentiate the two birds.

In the southern part of the State these Wrens are common residents of the foothill oak regions and brushy mountain sides up to about 6,000 feet. During the winter months they come down into the lower country in the canyons, and wherever there is low cover. They are oftentimes as friendly as the House Wrens, coming into the gardens that border their chosen haunts, and nesting

in bird boxes unmindful of the family. They are saucy, jovial little sprites that have a number of harsh, rasping notes and a wonderfully sweet song.

GENUS TROGLODYTES: WESTERN HOUSE WREN.

Western House Wren: *Troglodytes ædon parkmani*.

FAMILY—WRENS.

PROBABLY the most familiar member of this interesting family is the little House Wren, sometimes called Parkman's or Pacific on the western coast. It is about five inches long, with dull brown uppers finely barred with blackish, except on head; under parts a dingy white, browner on flanks and sides and lightly barred with blackish. The bill is long and slender and the eyes very bright. While this little sprite is dull of plumage, it is by no means so in actions, being one of the nimblest, jolliest, and most lovable members of the bird world.

The Western House Wren is a summer visitor in most parts of our State, though they stay late in the southern part and in some localities spend the winter. Though resembling the eastern bird in plumage, in the friendly way of coming about the house it differs from its eastern cousin, since it prefers canyons, arroyos, and parks that adjoin such places, to the dooryard. While occasionally they come to you, as a rule, you must go to them. The bird has little fear of mankind and pours forth its jovial song in a continuous performance—Wren-like. In the matter of a harsh, scolding call note, or notes, they are unmistakable. A bird which has recently come into my yard has given a great number of calls, aside from its regular song. The commonest was a nasal *spee-ee-ee*, a

rasping, unmusical performance. At another time it was a sharp, *sit-e, sit-e, sit*; also *chi-e, ee-e, ee-e, e-ah*, and a squeally *squee-ah, sque-e-ah*.

Usually, the male comes ahead and gets the home ready for the female. The nest is loosely made of long, coarse twigs which the little builder sometimes has trouble to get into the hole he has chosen for a nest, but, nothing daunted, he works steadily all day long and as he works, he sings. Usually, after the load has been deposited, this whole-hearted, carefree song bubbles forth, the notes coming so rapidly that they almost trip on each other. If the oft-repeated ditty sometimes becomes monotonous, we cannot but rejoice in the great delight it gives the little singer.

Oftentimes when the female finally arrives and sees the nest prepared for her by her gallant spouse, she angrily rejects it, flying at the little builder and driving him away while she throws out the material and builds the nest all over to her own liking. The male seems not to resent this, but sings away as cheerily as ever.

One little male that I watched building a nest made over forty trips a minute with material, and after each trip he paused long enough to throw back his head and pour forth his bubbling song. In this case the female accepted the nesting site, but made some different arrangements in the interior decorations, as seemed quite fitting that the lady of the house should do.

From five to seven eggs are laid and they are pretty pinkish-white affairs which are thickly spotted with reddish-brown. In the southern part of its range two broods are hatched, while farther north there is only one. The female does all the brooding, leaving the nest at the call of her mate and foraging with him.

GENUS NANNUS: WESTERN WINTER WREN.

Western Winter Wren: *Nannus hiemalis pacificus*.

FAMILY—WRENS.

IN THE Winter Wren we have one of the smallest members of the family, the length being about four inches, the body plump, and the tail short and carried tilted over its back. The upper parts are a warm brown with black bars on wings and tail; the under parts are a cinnamon-buff, with flanks and belly black barred. There is a light line over the eye.

This interesting little bird breeds from Alaska and northern Alberta south to central California and northern Colorado, wintering as far south as southern California and New Mexico.

It is a tiny midget having short, straight bill, short bobby tail, and large feet and legs. It is a dweller of coniferous forests where it lives in nooks and hollows among the big redwoods, enlivening the solitude of the forest with its loud, energetic song. Mrs. Bailey says of the song of the eastern bird: "It makes me think of the song of the Ruby-crowned Kinglet, the volume and ringing quality of both being startling from birds of their size. But the Kinglet's may be less hampered by considerations of tune, the Wren's song has a more appealing human character. It is like the bird himself. The dark swamps are made glad by the joyous, wonderful song."

In the northern part of its range it strays down into

the near-by valleys and lowlands to the delight of all who come across it.

The nest is built in decayed stumps, crannies, up-turned roots, or like places, and much green moss is used in its make-up. With this are twigs for a foundation and hair, feathers, wool, and finer moss which make a cozy inside. Like most of their tribe, the nest is bulky and the opening to it small.

One cannot help but wish that these interesting little Wrens might be more abundant in their entire range.

GENUS TELMATODYTES: TULE WREN.

Tule Wren: *Telmatodytes palustris paludicola*.

FAMILY—WRENS.

THE Tule Wren is found the entire length of the Pacific Coast and resembles the Marsh Wren of the east. It is about five and one-half inches long and is more distinctive in markings than most of the tribe. The top of the head is black with middle of crown washed with brown and a white line over the eye. The middle of back is black broadly streaked with white; rest of upper parts brown; middle tail feathers and tail coverts generally distinctly and continuously barred with black; under parts soiled whitish with flanks brownish. The tail is carried up over the back in the perkier of Wren fashions.

These birds build wonderful nests by pulling down portions of the reeds and weaving them into a ball which has an entrance on one side. It is placed well up above the water and lined with fine grasses and material to withstand moisture. The curious thing about this nest-building is that the birds build many of them, and the patient bird student must wade through the moisture from nest to nest before the one really containing the

five to nine eggs is located. And then such a scolding and fuss as the owners make at this intrusion.

The bird has a rippling, gurgling song that is heard from the depth of the reeds where the sprite prefers to stay. Balancing adroitly on the side of some reed the little singer throws back his head and sings as though his life depended upon it. The birds live in colonies in the marshes and the person who visits them is well repaid for the trouble and exertion.

GENUS *CERTHIA*: SIERRA CREEPER.Sierra Creeper: *Certhia familiaris zelotes*.

FAMILY—CREEPERS.

WHILE in the east the Brown Creeper is the only member of the family, the west has several subspecies. The commonest one in California is the Sierra Creeper which ranges from the Cascade Mountains of Oregon and the Sierra Nevadas of this State south to the San Jacinto Mountain Range in southern California, spreading into the adjacent valleys in winter, and being a common resident of the coniferous forests from 4,000 to 9,000 elevation.

This interesting little bird is about five and one-half inches long, with upper parts dusky which become bright rusty on rump; line over eye, streaks on shoulders, and spot on wing white; under parts white with sides washed with brown; bill long and curved; tail feathers stiffened and sharply pointed.

From the Santa Cruz Mountains, north, a similar bird is known as the California, or Tawny, Creeper. Its upper parts are rusty brown, brightest on rump, and the streaks on head and back are often tawny. Dawson describes the note of this bird in Washington as *Tew, tewy, tewy, Ping*, lisped from the tree-top. And again, *kee, kus, wit, it, tee, swee*, like a garland of song caught up at either end and made fast at the other.

Dr. Joseph Grinnell in volume nine of *The Condor* describes the nesting habits of this bird which he studied in the San Bernardino Mountains of southern California.

He says that while the birds themselves were most often seen and heard high above, scaling the massive trunks of the huge firs, pines, and cedars, yet their nests ranged not higher than twenty feet above the ground. He found the average height of thirty nests examined to be about six feet. In other words the majority could be at least touched by the hand as we stood on the ground. One nest was only three feet above ground.

"Although the majority of nests found were on cedar trunks, one was on a Jeffrey pine, and at least five were on silver firs. In the latter case the trees were dead and rotting, for it was only on dead trees that the bark had become loosened and separated enough from the trunk to afford the narrow sheltered spaces sought by the Creepers for nesting sites. But the huge living cedar trunks furnished the ideal situations. For the bark on these is longitudinally ridged and fibrous, and it frequently becomes split into inner and outer layers, the latter hanging in broad loose strips. The narrow spaces behind these necessitate a very compressed style of nest." Dr. Grinnell describes a typical nest which he studied as follows:

"The material employed externally was cedar bark strips one-eighth to one-half inch in width. This material had been deposited behind the loosened bark until it packed tightly enough to afford support for the nest proper. The bark strips extended down fully a foot in the cavity, and some of them protruded through the vertical slit which served the birds as an entrance. The main mass of the nest consisted of shredded weathered inner bark strips of the willow, felted finest internally, where admixed with a few small down-feathers. This nest proper was six inches wide in the direction permitted by the space, and only one and three-fourths inches across the narrow way. The nest cavity was one and one-third by two and one-fourth inches, so that the

sitting parent always occupied one position diametrically.

“No nests were found with eggs later than June 11, but young were found, yet unable to fly, until July 20.” From three to six young birds were found in a brood.

FAMILY—SITTIDÆ: NUTHATCHES.

THE Nuthatches are among the most interesting of our feathered folk because of their ways. They are birds of the deep forests where they build their nests in deserted holes, from a few feet to a great height from the ground. Sometimes the birds excavate for themselves.

The various members of the family are from four to six inches long, with short stubby tails and long sharp bills which in some species turn slightly upward. The name—Nuthatch—seems to be a misnomer for, while the birds are fond of nuts when some human being is accommodating enough to crack them for them, their bills seem not to have been intended to crack hard-shelled nuts. They have a way of storing their food, such as sunflower seeds, acorns, corn, by stuffing it into the crevices of bark and hammering it in. The food is scattered around rather than stored in one particular place as the Jays so often do.

The characteristic which makes these Nuthatches so easy to identify is their acrobatic performances on tree trunks and limbs. Every bird student is familiar with the jerky movements of our Woodpeckers as they ascend a tree trunk by hops, supporting themselves by their strong sharp-pointed tails, and being aided in their movements by the toes, two of which, in most species, point forward and two backward. You remember that the Woodpecker usually goes upward and when he tries to descend it is by a backward jerky movement that is anything but graceful. He never descends head foremost.

On the other hand, the Nuthatches have feet like other perching birds, with strong curved claws. It is their manner of handling their feet which enables them to so adroitly go head-up or head-down as they please. The bird has a way of throwing one foot far out to one side and backward, with the toes turned sideways and the claws gripping the rough bark. The other foot is turned forward, but well out, with the sharp hind claw clasped firmly in the bark. It gives him a wide base and enables him to maintain his equilibrium in any position. He seems to prefer going down the tree trunk head first as he "noses" in every nook and cranny for food. The short tail is never used as a support.

Not only does the bird come jauntily headfirst down the tree, but he walks with equal ability on the underside of the limbs, quite unconscious that he is doing anything unusual.

These Nuthatches are friendly little fellows and when they have finished their nesting duties, and the cold and snow have cut down their food supply, especially in the eastern States, they come about the homes and help themselves to cracked nuts and suet from bird table, or tree-trunk, where it has been placed for them. More than that, they sometimes go in at a window for food, even perching on a person's hand, so unsuspecting and trusting are they.

Of the eight species and subspecies found within the United States three are eastern, four western, and one found both east and west.

GENUS SITTA: WHITE-BREASTED
NUTHATCH. (Eastern.)

White-Breasted Nuthatch: *Sitta carolinensis*
carolinensis.

FAMILY—NUTHATCHES.

THE most common species of the east is the White-breasted Nuthatch which breeds from northern Minnesota, central Ontario, southern Quebec, and Newfoundland south to the northern parts of the Gulf States. It is, however, best known as a winter visitor where in company with Golden-crowned Kinglets, Chickadees, and Downy Woodpeckers it may be seen wandering about in the forests or orchards, unmindful of human beings. Quaint, interesting little creatures they, indeed, are.

GENUS SITTA: SLENDER-BILLED
NUTHATCH.

Slender-Billed Nuthatch: *Sitta carolinensis aculeata*.

FAMILY—NUTHATCHES.

THE Slender-billed Nuthatch is the western representative and differs only slightly from the White-breasted. Some of the wing feathers (the tertials) are a dull bluish-gray, with black patch along shaft of longest feather *pointed at tip*, while in the eastern bird it is *rounded at tip*. To the ordinary bird student this matters little since to realize the difference one must have them in the hand. Since their ranges do not overlap and they are unlike any of their tribe there is little danger of confusing them.

Though occasionally these birds stray down to the

foothills and valleys, they are essentially dwellers of the high altitudes, where they forage among the big trees in the quietude of the mountains, oftentimes in company with Warblers, Chickadees, and other small species.

Like their eastern cousins, they are friendly toward one another and keep up various nasal notes that are similar to those of the White-breasted, being perhaps softer and more subdued.

In the mountains of southern California Slender-billed daily visited a party of summer campers and ate *bread crumbs* from their bird table, a rather unusual performance, since insect life, not vegetable, is their preferred diet.

The upper parts are a blue-gray with wings and tail marked in black and white; under parts and sides of head are white, while the top of head and back of neck are a glossy black. The female differs only in having the back of neck veiled in gray.

Forbush tells us that this Nuthatch is the particular guardian of the deciduous trees, preferring the oak, chestnut, elm, and other hardwood trees to the pine. It is a cheerful bird which often shows much curiosity, coming quite near to any one attracting its attention, and with head hanging downward, gives its nasal *quank, quank, quank*, as it inspects you. This call is a peculiar, weird sound, somewhat like the *quack* of a duck, but higher keyed and with less volume, having rather a musical twang. Besides this common call, there is another that is the bird's nearest attempt at a song, a monotonous *hah-hah-hah* given in a high key.

Nuthatches nest in holes in trees, or posts, which they sometimes hollow out themselves. The hole is lined with feathers, leaves, hair, or fur, upon which from five to eight eggs are laid. The female does all the brooding but is fed by the male, who is ever solicitous of her welfare and never far away.

Economically these birds are most beneficial, guarding as they do the bark and crevices of the trees, and finding many a pest that would otherwise be overlooked.

On November 19, 1919, one of these birds appeared in my yard, and rested on a tree, head down, for fully five minutes, seeming not to care that I was only a few feet away. These birds were noted in other places during the winter.

GENUS SITTA : RED-BREASTED NUTHATCH.

Red-Breasted Nuthatch: *Sitta canadensis*.

FAMILY—NUTHATCHES.

THE Red-breasted Nuthatch is found both east and west, breeding from above the United States south to northern Minnesota, Michigan, and Massachusetts, and south in the Sierra Nevada and Rocky Mountains to California, Arizona, and New Mexico, and in the Alleghenies to North Carolina, wintering from southern Canada to Lower California, New Mexico, Arizona, and the Gulf Coast.

He prefers the high altitudes among the pines and firs, rather than the deciduous forest trees which shelter the White-breasted.

It is scarcely five inches long and in plumage differs from the others here considered in having reddish-brown under parts and a white line which cuts into the black above the eye. This white stripe above the eye is most noticeable and makes identification easy.

The note is unmistakably that of a Nuthatch, but is a higher, more nasal, slightly drawled note which has been translated as *yna, yna*, by Chapman, and *nyă, nyă*, oft

repeated in an incoherent strain of wild excitement, by Dawson.

The Red-breasted seldom visits the orchards, preferring the woods to the haunts of man. It is fond of the seeds of pine cones and is often seen near the ends of the branches. It also is an adept at walking *beneath* the limbs, which mode of procedure it practices rather more than its larger relatives.

The habit of smearing pitch pine just below the nest opening (Dawson) would seem to indicate some reasoning on the bird's part, since this is probably resorted to by them to protect themselves from the inroads of ants and insects which have proved pests to so many birds at nesting time.

The winter of 1919-20 these interesting little birds came down into the valleys of southern California and were seen by many people. At different times they were in my own yard, and neighborhood. We hope that their visits were so satisfactory that they will come another winter.

GENUS SITTA: PIGMY NUTHATCH.

Pigmy Nuthatch: *Sitta pygmæa*. *Vig.*

FAMILY—NUTHATCHES.

THE Pigmy, or California Nuthatch, scarcely four inches long, is the dearest little fellow imaginable. He differs from the others of the species in his brownish crown and white nape.

The birds are gregarious little midgets and after the nesting season forage in large flocks in the pines of the high altitudes, sometimes roving down into the valleys in the cold weather. As they move from tree to tree, invading every part of it, there seem to be legions of them,

and so sprightly are they, as they forage and keep up their low call, that you cannot adequately count them if you would.

They are essentially birds of the west, being found from British Columbia south to Mt. Orizaba, Mexico; and from the Rocky Mountains to the Pacific.

Irene Grosvenor Wheelock, in her "Birds of California," tells of finding a nest of the Pigmy Nuthatches in a hollow post several feet out in the waters of Lake Tahoe, California. The birds were carrying feathers into a crevice scarcely large enough for a mouse. Though Mrs. Wheelock stood in a boat and rested a hand on the post, not a foot from the doorway, they came and went, unmindful of her. Later, also, when there were baby birds, they did not mind her presence.

Mrs. T. F. Bicknell, of Los Angeles, tells of a quarrel between a Sierra Creeper and one of these Nuthatches which took place in the top of a dead pine about twenty feet from the ground in the San Bernardino Mountains. Hearing a great commotion in the tree and turning her glass upon it she tells us that she found "that a Pigmy Nuthatch and a Creeper were having an unneighborly difference of opinion as to which should hold possession of a large hole in the top of the tree trunk. There was much loud talking by both and sundry pecks and thrusts of bills, and ruffling up of feathered coats. Soon the little blue-gray Pigmy was joined by two comrades who immediately entered into the quarrel with many angry threats and loud scoldings that completely vanquished the more peaceably inclined Creeper, who departed with dignity.

"Then the three Nuthatches took turns going into the hole, coming out with tiny chips in their bills which they tossed over the side of the tree trunk onto the ground. If one worked alone, he flirted the chips from his bill while he stood at the entrance of the hole, but

if the three worked, each one in turn came out, tossed away the chips, turned completely around, and went back into the hole. Sometimes two would be inside at once, at other times two would be outside at the same time and they kept up an incessant chattering to each other as they worked.

“After fifteen or twenty minutes of ceaseless industry each little bird, in turn, flew away with a fat grub in its bill and the nature of the quarrel was explained; quite evidently the Creeper had invaded the feeding ground of the Nuthatches.”

GENUS BÆOLOPHUS.

FAMILY—PARIDÆ: TITMICE.

THE Titmice are so closely allied to the Nuthatches that formerly they were listed together in one family. Though similar in some of their habits, in form they are quite different, the Tits having short, curved bills, wings and tail about equal in length, and rounded, and the plumage loose. They are small birds of wooded countries and forage about in large flocks, destroying vast numbers of small noxious insects. In most parts of their range they are residents, having little fear of any but the coldest weather.

Part of them, like the Nuthatches, nest in holes, while others build the most wonderful hanging nests.

Only fifteen species of the known two hundred and forty-one are dwellers of North America, seven of which occupy some portion of the United States.

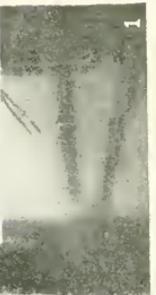
GENUS BÆOLOPHUS: PLAIN TIT-
MOUSE.

Plain Titmouse: *Bæolophus inornatus inornátus*.

FAMILY—TITMICE.

IN California west of the Sierra Nevada, breeding from Mendocino and Siskiyou counties to northern Lower California, lives one of those interesting midgets, which is known as the Plain Titmouse.

The crest and upper parts of this bird are a brown



1—BLACK PHEBE ON NEST. 2—CALIFORNIA CHICKADEE AT NEST.



Copyright by Brown Brothers,

PLAIN TITMOUSE.

gray, which becomes lighter below. He is just a dull little fellow whose identity is saved by his tall, sharp-pointed crest, which distinguishes him from every other feathered thing.

His common call reminds one of that of the Chickadee, but is louder and has a more metallic ring. *Tseeé-day-day, day-day, day* or just *tseeé-day-day*, the bird calls as he inspects your pepper tree, perhaps only a few feet from where you are standing. It makes no difference to him that you are watching his every move just so there are juicy tidbits to be extracted from crevice or limb. The bird has several other calls: one is a *tee-wit, tee-wit*, and another sounds almost like a yodel. Sometimes the notes have a squeaky sound as if the throat needed oiling.

In the mountains they are known as *camp birds* from their friendly habit of coming about and making themselves thoroughly at home. When the dining-room is in the open, they fearlessly come down onto, and under, the table in search of crumbs; also going into the tents, and in no way minding the presence of the human occupants.

One fall I watched two of these Titmice foraging in the white oaks of the Sierra Nevadas at about 3,500 feet elevation. The acorns were small and green, being about the size of my little-finger tip. It was amusing to see the birds go out to the very end of a tiny branch in search of these acorns which they picked away at until they could get at the meat, which they ate. As they foraged they kept up their metallic *seeé-day-day, dáy-day, day*.

Unlike their relatives, the Chickadees, they do not go in flocks, but rather in pairs, or singly. Their nests are made of various soft material tucked away in some deserted hole in tree or stump, from five to eight white eggs being laid. The young are dear little replicas of their parents.

GENUS *BÆOLOPHUS*: GRAY TIT- MOUSE.

Gray Titmouse: *Bæolophus inornatus griseus*.

FAMILY—TITMICE.

IN THE mountains of the arid interior of the western United States, breeding from Nevada, Utah, and central Colorado to southeastern California, southern New Mexico, and western Texas, a similar bird is known as the Gray Titmouse. It is a rather larger, stouter-billed form (being six inches or more long), and a lighter gray above, with under parts whitish-gray. In nesting and feeding habits it resembles the Plain Titmouse.

GENUS *PENTHESTES*: CHICKADEE. (Eastern.)

Chickadee: *Penthestes atricapillus atricapillus*.

FAMILY—TITMICE.

THE Chickadee, or Black-capped Titmouse, as it is sometimes called, is one of the best-known, most beloved birds of the eastern United States. Few of our feathered friends have been so lauded in song and story as has this little gray bird with his black cap and throat, set off by white between.

While many of these birds breed north of our country, others range south to central Missouri, Illinois, northern Indiana, Ohio, Pennsylvania, northern New Jersey, and in the Alleghenies south to North Carolina, going somewhat farther south in winter.

Adult Chickadees are about five inches long, with

plump bodies and long tails. The top of head, nape, and throat are a shining black, with sides of head and neck white; the upper parts are ashy with the wing and tail feathers margined with whitish; breast white with belly and sides buffy.

Like other members of the family they are veritable acrobats, swinging upside down, or right side up, as best suits their convenience in their search for insect eggs, or other similar dainties. As they forage they give their *Chickadee-dee* note which has given them their name. It is not a real song, for none of these Tits are singers. Besides this common call which is varied somewhat and added to with several *dees*, a pensive, musical *phæbe* note is used by both adults. When excited they scold in a truly comical way, using a hoarse *tshé daight, daight* call.

Chickadees are resident birds and winter or summer may be found in the trees of the mountains where, for the most part, they raise their young. They are, however, extremely friendly little fellows, knowing no fear of mankind, and not only coming to the lower altitudes during the winter months, but many of them build about the gardens, selecting holes in old stumps, decayed trees, or even boxes placed for them. Usually the birds use some deserted hole from two to twenty feet from the ground, but they are capable of digging their own nesting place, if the wood be rotten. Being wise little birds, they carry the chips away from the nest instead of just scattering them around below the hole as do the Woodpeckers. The nest hole is lined with feathers, fur, plant down, moss, or other available material. From six to ten eggs are laid and the young usually leave the nest early in June. While the baby Chickadees, which resemble their parents, are foraging for themselves, the old birds rear another brood which leave the nest sometime in July. Then, all banded together in one big flock,

they roam through the forests or descend into the valleys, often accompanied by Kinglets, Nuthatches, Creepers, and Woodpeckers, making a jovial company.

These tiny birds are among our most useful ones. They are fond of tent-caterpillars and their eggs; canker-worm moths, their larvæ and eggs; codling moths with their larvæ; the forest tent-caterpillar, as well as the larva, chrysalis, and imago of the gipsy and brown-tail moths. Plant lice and their eggs, olive and other scales, are also eaten.

Dr. Weed tells us that more than 450 eggs of plant lice are eaten by one Chickadee in one day. Supposing that only 100 were eaten daily by each of a flock of ten, there would be destroyed 1,000 a day, or 100,000 during the winter by only ten birds.

Mr. C. E. Bailey, after careful examination, makes a statement of prodigious work done by these birds in destroying the female and eggs of the spring cankerworm moth. Mr. Bailey found that each female moth laid on an average 185 eggs, and each Chickadee ate 30 females a day from March 20 to April 15, which would give the bird a record of destroying in one day 5,550 eggs, and in 25 days in which the cankerworm moths "run" or crawl up the trees, 138,750. It is quite likely that some of the moths were not found until after they laid the eggs, but the Chickadees found and ate the eggs also. Is it any wonder that the little sprites are forever on the move?

GENUS PENTHESTES: OREGON CHICKADEE.

Oregon Chickadee: *Penthestes stricapallus occidentalis*.

FAMILY—TITMICE.

ON THE western coast extending from British Columbia to Oregon is found a Chickadee which resembles the eastern one in habits and friendly ways, but is smaller and darker.

Wm. L. Finley, author of "American Birds," has taken some pictures of these birds which graphically illustrate their fearlessness of man. Some of them are taking food from the hand; another photograph shows a bird feeding its young on a person's head, and another is helping itself to a nut held between the lips.

The call notes differ somewhat from those of the eastern birds but there is no doubt but that it is Chickadee language.

Another western species which resembles the preceding is the Long-tailed (*P. a. septentrionalis*) which breeds from Alaska south to northern New Mexico and eastern Kansas, and from eastern Oregon east to western Minnesota and western Iowa, going south in winter to central Texas.

This bird differs from the Oregon in having a longer tail and being lighter in coloration. There are, also, several other western subspecies which occupy a limited range, and differ in some slight way from the common form, which will not be considered in this work.

GENUS PENTHESTES: MOUNTAIN
CHICKADEE.

Mountain Chickadee: *Penthestes gambeli gambeli*.

FAMILY—TITMICE.

ON THE western coast, extending from British Columbia and west central Alberta, and east central Montana south to the southern Sierra Nevada in California and mountains of Arizona, New Mexico, and western Texas is found the Mountain Chickadee, which differs somewhat from the eastern species.

The top of the head and throat are black, with side of head white; upper parts ashy-gray; under parts grayish white with sides gray. The thing which distinguishes it from others of the tribe is the conspicuous *white line above the eye* which cuts into the black crown, usually meeting on the forehead.

In the high altitudes these birds are the same jolly midgets as their eastern cousins, but seldom do they come to the valleys and gardens. Perhaps the fact that there is no severe weather to escape may account for their neglect of their human friends.

Yet in the winter of 1914, and again in 1920, one of these birds was in my garden several times, his plaintive *Chick-a-dee-de* attracting my attention to his presence. The note resembles that of the Plain Titmouse, but is weaker, higher pitched and different in tone.

This bird was all alone and stayed about for several weeks. He ate mostly from the pepper trees and once I distinctly saw him *eat the pepper berries*, a thing that many birds do, but hardly to be suspected of a Chickadee. In the mountains they go about in jolly bands,

bobbing along in their short flight from tree to tree, hanging upside down when necessary, building in holes, and, in short, doing all the things done by their eastern cousins.

GENUS PENTHESTES: CHESTNUT-BACKED CHICKADEE.

Chestnut-Backed Chickadee: *Penthestes rufescens*.

FAMILY—TITMICE.

FROM Alaska south to California and east to western Montana is found the Chestnut-sided Chickadee, a bird differing from the others in his rich chestnut uppers and brownish markings on head and throat, separated by a small patch of white.

These birds are often found in the same flock as the Oregon Chickadee and other small species that forage together. In habits they differ little from other Chickadees. The call note is given as a lisping *the-the-the-te-te*. Dawson says this midget says *kissadee*, rather than *chickadee*. He also accredits the bird with a real song which consists of a series of notes as monotonous as those of the Chipping Sparrow. *Chick, chick, chick, chick, chick, chick*. He says that perhaps by another performer each note may be given a double character and sound like the snipping of barber's shears, as *Chulip, chulip, chulip, chulip, chulip*.

In northern California, a bird similar to this one but having sides and flanks light grayish, is called the California Chickadee (*P. r. neglectus*. Ridgw.).

To the visitor in the mountains is left the pleasure of hunting up these various species. Surely it will be worth while for life in the mountains is always delightful, and the pursuit of a new species more than fascinating.

GENUS PSALTRIPARUS: BUSH-TIT.

Bush-Tit: *Psaltriparus minimus minimus*.

FAMILY—TITMICE.

ONE of the most adorable of birds is the little Bush-tit, which is found only on the western coast, ranging from southern British Columbia and northern Washington to northern Lower California. In its northern range it is a summer visitor, only, but farther south, in California, it is a resident, often coming into the garden to build its long nest, and in the winter time when they are banded together in large flocks, making daily visits in search of scale, and other small insects.

They are only about four inches long and the tail is about half of the entire length. The body is plump and the bill short. In color they are the most modest of birds, being a dull grayish-brown which is darker on the head and lighter below, the general impression, however, being of dull little bundles of feathers that are never quiet. Their wings are short and the flight jerky. However, they have little need of taking long flights since they frequent wooded places where they flit from tree to tree, or bush to bush.

The tiny midgets are gregarious and after the nesting season go about in large families of twenty, or more, and are the merriest band imaginable. As they forage they keep up a continuous note, a sort of *tsip, tsip*, varied by a bell-like *tree-e*, and a soft *tut, tut, tut*. This continuous calling always announces their presence in the neighborhood, and I presume is kept up in order to enable them to keep track of one another.

Sometimes one of the midgets lags behind the roving band and they pass on without him. When he wakes up

to the fact that his companions have gone on, it is truly comical to see the way he hurries to overtake them. It is as if he feared some bugaboo of the deserted tree would leap forth and devour him.

Old and young might well learn a lesson from these midgets; a lesson not only in industry and faithful performance of the tasks undertaken, but of good fellowship and friendly comradeship. Never have I heard any dissension, or scolding note, among the Bush-tits. It is peace, harmony, and good cheer wherever they roam. Blessed midgets, would that the east might also have them to enjoy.

Like the Chickadees they are veritable acrobats, caring not how they hold onto a leaf, or twig. Under side will do quite as well for them as upper.

Dr. Joseph Grinnell, in volume V, No. 4, of *The Condor*, has an interesting article on the call notes of the Bush-tit. He tells of one habit these birds have which they use in times of danger. An instance is cited where a flock of the birds were foraging in the tree-tops when a bird in one tree began a shrill wavering whistle and instantly every bird in the trees took up the same call, while they remained immovable on their perches. The noise and the rigid posture was maintained until a hawk, which they had spied above them, had passed them by. Grinnell says that the note given from so many throats in so many places made it impossible to locate and they were safe.

Undoubtedly, all bird students have noticed the ventriloquistic ability of many birds. How almost impossible it is to locate them, although you know just about where they are. While disconcerting to the bird student, it protects the bird.

The nesting habits of these birds are most interesting, and the nest a work of art. In their southern range they are fond of oak trees, but also use peppers, eucalyptus,

and others; while in Washington they select willows, hemlocks, and hazels.

The nest is a pendant from eight to ten, or even more, inches long which is entered by a round hole near the top on one side. The outside frame is built of fibers, strings, rags, soft material, and spider webs, according to the proximity to mankind, and the fancy of the builders. The inside is elaborately padded with plant down and feathers which are felted into the outer wall, making a solid structure which is peer among nests.

In southern California the birds begin nesting operations early in the year. One February, on the nineteenth, I found a pair carrying fine material to a nest which proved to be a last year's one.

It was hung in a live oak tree about fifteen feet from the ground and, being decorated with oak tassels, quite blended with its surroundings. Although it was in a thickly settled community, where people were constantly passing, few ever saw it.

Both birds worked at this repairing, making in one time when I watched them, twenty-six trips in forty-five minutes, the shortest interval of coming being one-half minute, the longest six minutes. Sometimes the material brought was very small, and at other times their mouths were stuffed with a cottony substance. I have seen them tug at the ravelled end of a rope for material, and one pair, that nested in a near-by yard, pulled wool from a Navajo Indian rug which was airing on the line. Also, from the lath house they brought bits of green moss which is used by mortals to line fern baskets.

For more than a month I watched these Tits putting the finishing touches into their home and I wondered if *nest-building* was like *house-building*, the outside of the structure going up with a rush, and, when looking completed, being only well begun. As they worked upholstering the inside, I could see the nest move and tell just where they were.



NEST OF BUSH-TIT.



NEST OF BUSH-TIT OPENED TO SHOW NEST HAD
BEEN USED FOR TWO SETS OF EGGS.



1—NEST OF WREN-TIT. 2—BROODING WREN-TIT.

It was the twenty-first of March before brooding began and it was all done by the female, the male coming occasionally to the nest, when his mate joined him in a foraging tour, but she never left the eggs long alone. Even after brooding had begun they carried in building material, seeming never to feel that the nest was really finished.

When two weeks of this brooding by the female had elapsed, I went to the nest, expecting to see both birds busy feeding, for I knew from previous observations, that no time was spent in loafing about after the nestlings were hatched. I have one feeding record of thirty-five times in one hour; and another of forty-six times in sixty minutes—the shortest interval being one-half minute; the longest, five and one-half minutes.

You can, perhaps, imagine my surprise when I found that the birds were taking more building material into the nest, instead of food. I was at a loss to know just what it could mean. Two days later the pair were still carrying in building material, making it evident to the observer, as plainly as if they had been able to tell it, that there were no young in the nest.

The tree where the nest hung was a magnificent old oak which I had worked hard to prevent the owner from cutting down to make room for a bungalow. Though the tree was spared, my protest against trimming all the grace and beauty out of it had been of no avail—and in the trimming the nest was taken down. For a day I left it hanging in our yard, hoping that the birds might come over, as they had been doing almost daily, and so resume family affairs; but, when they did not do so, I took it down and opened it for investigation.

I found two small pinkish eggs which lay about three inches below the opening and were quite evidently the beginning of another set, which the cutting down of the nest had stopped. I had felt, when I found the birds carrying material into the nest, instead of food, that

probably, the eggs not hatching, they had covered them up and gone to laying more. By continuing my search among the feathers I found that my surmise was correct, for two inches farther down so completely hidden by feathers that for some time I failed to find them, lay two eggs which lacked the pink tint of the unbrooded ones. I also found that I was right as to this being a last year's nest, for still below the old eggs, nearly at the bottom of the nest, there was a layer of material having particles of old egg shells, plainly showing that a brood had been hatched there.

It was marvelous, the number and size of feathers that went into that nest. I could not count them without destroying the nest, but I verily believe that there were hundreds of them, varying from one-fourth of an inch to four inches, or as long as the little builders themselves.

From northeastern Oregon to southern California (except the coast strip) a similar bird is known as the California Bush-tit (*P. m. californicus*). It differs from the preceding in being lighter colored, the top of the head being light brown, contrasting with the light gray of back. The two are so much alike that the ordinary observer would be troubled to tell them apart.

To me they are all just dear little Bush-tits, and I care not what their scientific name may be.

GENUS AURIPARUS: VERDIN.

Verdin: *Auriparus flaviceps flaviceps*.

FAMILY—TITMICE.

IN the little Verdin we have a Tit which is quite different from the others. Coues calls it the Gold-tit, which seems most appropriate since the head of the male

is a bright yellow. The female is duller, and the young lack the yellow color. The birds are over four inches in length and the wings are longer than the tail. Save for the yellow head and chestnut shoulder patch, they are gray above and whitish below.

Such interesting midgets are they, building long hanging nests which they occupy as sleeping quarters in the winter time, flitting about from bush to bush, and generally making themselves attractive, that we cannot help but regret their limited range, which includes the deserts of southwestern United States and Mexico from southern California, southern Nevada, and southern Texas, south.

GENUS CHAMÆA.

FAMILY—CHAMÆDIDÆ: WREN-TITS.

MOST of the western birds differ in some way from corresponding species found east of the Rockies. In California, and southern Oregon, there are several species which are not found at all in the east and although sometimes found as stragglers in other western States, are most common within their borders.

One of these birds, which differs from anything else in feathers, is the Wren-tit, some form of which is found from the coast of Oregon to Lower California.

It has been hard for scientists to decide to just what family this anomaly belongs. Some have felt that it should have a family by itself and be placed next the Wrens, and until recent years it has been listed with the Nuthatches and Tits, which does not seem appropriate, since in neither plumage, nor habits, does it resemble the former; the resemblance to the latter being more pronounced. In the latest edition (1910) of the A. O. U. Check List the bird, in its various forms, is given a family by itself.

The name Wren-tit seems not inappropriate, since in color, some of its notes, long tail, and many ways it resembles a Wren, while its head and short bill resemble the Bush-tit, formerly its cousin.

GENUS CHAMÆA: PALLID WREN-TIT.

Pallid Wren-Tit: *Chamæa fascinata hénshawi*.

FAMILY—WREN-TITS.

THE Wren-tit is not an attractive looking bird. In fact, his light yellow iris gives him a rather uncanny look; his shortened forehead, which makes him look as if some one had slapped him in the face; his long, expressive tail, his fluffed-out feathers which give him a scraggy appearance, while making him extremely interesting, do not add to his beauty.

They are six inches long, about half of which is tail, and are a dull brown, or gray, in color, being lighter below with indistinct markings. Male and female are alike in plumage, habits, and calls. They are essentially birds of the chaparral-covered hillsides, being found as high as 7,000 feet.

This form ranges in the foothills and valleys of the interior from Shasta County south to Lower California, and along the coast from Monterey Bay, southward. From the Pacific coast of Oregon and northern California (from Columbia River to Humboldt Bay) is found the Coast Wren-tit (*C. f. pháea*); and from southern Humboldt County to Santa Cruz, California, is still another form which is known as the Ruddy Wren-tit (*C. f. rufula*).

Before knowing these birds I had read that they were shy and hard to observe. I was therefore glad to learn, by observation, that they were neither. To be sure, they have a stealthy way of coming through the low bushes, and as they are fond of this method of procedure, rather than flying through the air, they are frequently heard when not seen. But they have never impressed me as being afraid of mankind. In fact, as I write two of them

are in my garden; having come over from the near-by Arroyo Seco as if to prove that they are not afraid. *Whit-whit-whit*, repeated many times and with variations, they are calling to each other as they forage. One of the pair is in my pepper tree helping himself to the red berries, and the other has strayed into a neighbor's garden and the two are keeping up a lively conversation. This answering each other is a way of these birds.

Dr. Joseph Grinnell, in the September-October, 1913, number of *The Condor*, has a splendid monograph on the "Call Notes and Mannerisms of the Wren-tit." I feel that I can vouch for this account (did Grinnell's things need corroborating) since it exactly coincides with my observations of these birds.

Grinnell says of the most common call of these birds, a call which can be imitated with the human whistle: "Loud series of staccato notes all on same pitch but with decreasing intervals, the last of the series run together to form a thrill: *pit-pit-pit-pit-pit-tr-r-r-r-r*. Several counts from three to five of the first, distinctly uttered notes."

This call is usually described as given in a descending scale which has caused the bird to be sometimes called "scale-bird." Grinnell maintains that it gives no descending scale. While I admit that I have heard the call when it *seemed* to descend, the birds in the yard are using the same pitch, and I wonder if it is not the ending trill which is confusing and gives the impression of a descending scale.

Some of the other calls are, *tit, tit, tit*, given many times in a clear, measured whistle. Again the same notes sound like *pit, pit* or *whit-whit*. In the next breath the bird will say, *dear, dear, dear*, in a plaintive way that reminds me of the common call of the Rufous-crowned Sparrow. Again the bird starts the call with a tremolo note, *Tée-it, téé-it*, increasing notes as he proceeds until they bubble forth, Wren-fashion. An-

other series are jumbled together in a cackling, ruminating way. Clown, so far as vocal gymnastics are concerned, the bird might well be called.

One short note given is a harsh *scrat*, not unlike the scolding note of the House Wren.

Grinnell has settled to his own satisfaction that the notes are identical in the two sexes, that there is no nuptial song, and no song-season, the notes described being heard at all times of year. Even in August, the moulting season, the birds give their calls in my yard.

These Wren-tits are among the most inquisitive of the feathered tribe. If you are camping in the mountains they will be sure to sneak down through the brush to see who you are and why you have invaded their domain. If at any time you wish to call them about you, you have but to make some unusual noise, such as a shrill squeal by smacking the lips.

The generic name, *Chamaea* ("on the ground"), is misleading, since the birds live in the shrubbery and trees, from which they get their food.

Their wings are short and their flight bobby. Their long tails are most expressive, being used to accent their calls and flopping up and down as they fly.

Being birds of the chaparral, they naturally place their nests in the low bushes, making them of twigs, bark, grasses and feathers.

One spring I found one of these Wren-tits nesting in a neighbor's yard along the arroyo. The nest was in a low bush about four feet from the ground and was beside a walk where people were continually passing. There was one newly-hatched bird and two eggs. The mother did not seem particularly shy or mind my watching her. I regret to say that some cat found the nest and tore it partly down so that the bird left it.

FAMILY—SYLVIIDÆ: WARBLERS (Old World),
KINGLETS AND GNATCATCHERS.

THIS family of birds is divided into three subfamilies: The Sylviinæ, which is composed of some five hundred species, all of which, with the exception of one found in Alaska, the Kennicott's Willow Warbler, are inhabitants of the Old World. They are dull-colored birds which have one more feather in the wing than our Warblers have and are in no way closely related. Unlike the New World Warblers, these of the Old World are good singers, hence their name. While our birds, though not musical, have been called *warblers* because of some superficial resemblance to the foreign species.

In subfamily Regulinæ we have the Kinglets, two species of which are found in the east; with one species and three subspecies in the west.

Subfamily Polioptilinæ contains the Gnatcatchers, of which one species is found in the eastern United States and two species and one subspecies in the west.

All members of the family are small, dull colored, economically beneficial, and in every way most interesting.

GENUS REGULUS: GOLDEN-CROWNED KINGLET. (Eastern.)

Golden-crowned Kinglet: *Regulus satrapa satrapa*.

FAMILY—KINGLETS AND GNATCATCHERS.

SUBFAMILY—REGULINÆ: KINGLETS.

THE Golden-crowned Kinglet is a beautiful little bird, scarcely four inches long, which occurs in eastern North America, breeding from north of the United States south in the Rocky Mountains to northern Arizona and New Mexico, and to Michigan, New York, and mountains of Massachusetts, and in the higher Alleghenies south to North Carolina; wintering from Iowa, Ontario and New Brunswick to northern Florida, Tamaulipas, and northeastern Mexico.

In its olive upper parts and dingy white unders it resembles the Ruby-crowned Kinglet, but the brilliantly striped crown is a distinctive marking. The center of the crown is a bright cadmium orange, bordered by a yellow stripe, which is in turn bordered by a black stripe which goes across the front, forming a letter U on the crown. In front of this black U is a white stripe which extends across the forehead and over each eye. A short black mark runs back from each eye; the wings have two whitish bars. The female lacks the central orange stripe, it being all yellow between the black U. The immature birds are without the crown patch, or black stripe.

In most parts of the east this bird is a migrant. Banded together in sociable flocks they rove about during the fall and winter months, sometimes in company with Titmice, Nuthatches, and other small species, going

to the forests of the north, or the high mountains farther south, to nest.

In its nesting and food habits it differs not materially from the other Kinglets, preferring, as they do, the pines, firs, and hemlocks for nesting sites, and, like them, being insect eaters.

The nest is a semi-pensile cup hung from under a branch and skillfully woven onto it. It is constructed of moss and soft material, lined with feathers and hair. The feathers are arranged near the top so that the ends curl over the rim, thus cleverly concealing the eggs which are from five to ten in number. It seems to be the habit to lay more eggs than this nest will accommodate on the ground floor so that some must pile on top of the others. One cannot help wondering if they all hatch how all the nestlings can find room.

The female does all the brooding, the male working off surplus energy by constructing bogus nests in the neighboring trees, which seem never to be used. The male takes care of the first brood of nestlings when they are ready to leave the nest, and the female rears another brood, which usually come off the second week of June.

Forbush tells us of an interesting experience with these Kinglets which illustrates their economic value.

It is the habit of all the members of this genus to flutter about and hold themselves poised in air before an inviting-looking spray, Warbler fashion. These little Golden-crowns were seen to hover this way before a tuft of pine needles, then light upon it and feed. Investigation of the needles after the birds had left them revealed nothing, but examination of unvisited needles proved them to be covered with numerous black specks, the eggs of plant lice, which the birds were industriously eating. Later (December 29, 1905) Dr. Forbush saw seven of these birds in a home grove of white pines.

For two years plant, or bark, lice had been infesting the trees. The birds noted were not feeding on the needles this time, but mainly on the trunks and larger branches. They were unmindful of human investigation and it was easy to see that they were feeding upon the eggs of the aphids, which were deposited in masses on the bark of the pines from a point near the ground to a height of thirty-five feet. The trees must have been infested with countless thousands of these eggs for the band of Kinglets remained three days, apparently feeding most of the time upon them.

Their manner of getting this food from the trunk was to poise on wing while they picked the eggs from the bark. Surely a pretty sight.

There must be compensations in life, even in the bird world, and if the Golden-crowned is more beautiful than the Ruby-crowned, because of its gaudier head, the latter is the best singer. Golden-crowned seems to sing in a fragmentary, interrupted way which, though having something of the quality of the Ruby-crowned, lacks completeness. The common call note is a high-pitched *tsee, tsee, tsee*, or *teezee, teezee, teezee*.

GENUS REGULUS: WESTERN GOLDEN-CROWNED KINGLET.

Western Golden-crowned Kinglet: *Regulus satrapa olivaceus*.

FAMILY—KINGLETS AND GNATCATCHERS.

BREEDING along the western coast from Alaska to the San Jacinto Mountains in southern California; wintering from British Columbia to the highlands of Mexico, is found the Western Golden-crowned Kinglet, which differs from its eastern relative in being brighter, hav-

ing the crown colors sharper, and the under parts more washed with buffy brown.

In habits this bird resembles the eastern one. It is fond of the big trees, where it may be often heard when not seen. It is, also, a bird of the mountain regions, seldom straying into the valleys.

In the vicinity of Los Angeles, where the Ruby-crowned are common winter visitors, the Golden-crowned is rare.

GENUS REGULUS: RUBY-CROWNED KINGLET.

Ruby-crowned Kinglet: *Regulus calendula calendula*.

FAMILY—KINGLETS AND GNATCATCHERS.

THE Ruby-crowned Kinglet, one of our daintiest birds, is best known as a winter visitor in most parts of the United States, preferring to nest in the far north. However, some members of the tribe nest on the west coast as far south as above seven thousand feet in the San Jacinto Range, southern California, in the mountains to southern Arizona, central New Mexico; wintering from British Columbia, Iowa, and Virginia (casually further north), south over the United States and Mexican tableland.

In southern California these birds begin to appear early in October and all winter long they forage among the trees in the gardens, keeping up a noisy chattering that proclaims their presence.

They are scarcely over four inches long and are nondescript in coloring, being a greenish shade that blends well with the foliage they frequent. A light eye-ring with two wing bars will help to identify them, even if

you do not see the crimson patch which has given the bird its name. Only the male has this patch and the chances are that you will not see it for it is usually *concealed*, and you see only a somber little bird. This ability of our feathered folk to hide, or show, at will different colored plumage on various parts of their bodies is to me a marvelous thing.

In their winter homes the birds seldom show this red patch. When excitement, or anger, causes them to do so, the whole top of the head seems to be aflame, and the beholder is filled with delight at this exhibition. The female lacks this concealed patch, but so far as human observations are concerned, she might as well have it.

A story which was told me illustrates well the shape and size of the patch. It was after a winter rain in California and a large geranium leaf with upturned edges was filled with water. One of these Kinglets was drinking from the cup and the observer thought a red geranium petal had fallen on his head. She was, therefore, much surprised when the bird flew away and no petal floated to the ground.

These birds are extremely restless, flitting about continuously in their search for insect life, and keeping up a jerking movement of the wings. In plumage and size they resemble some of the Vireos, the Huttons, of the west coast, for instance. The sure way of distinguishing them is by the call, which is quite different. The Kinglet's common call, which he frequently gives, is a noisy chatter which is far louder than one would expect to come from so tiny a throat. Then, too, in the greatest part of its California range, it is a winter visitor, only, in the valleys, while the Vireo, although being a resident in some localities, is oftener seen in the summertime. The Kinglet is far friendlier than is the Vireo, coming about the gardens and into the shade trees along

the street, unmindful of the near proximity of human beings.

When nesting time comes these birds seek the high altitudes among the pines and firs of the mountains. Sometimes before they leave their winter homes they favor us with a song, and a wonderfully loud, clear, liquid one it is. One marvels that so small a bird can be so loud and beautiful a vocal performer.

Dawson tells us that these midgets nest in north-eastern Washington. He gives the common call note as *chit-tit*, or *chit-it-it*, and the core of the song, which can be whistled by the human listener and heard half a mile away, as *tew, tew, tew, tew, titooret, titooret*, the last phrases being given with a rising inflection, and with an accent of ravishing sweetness. The nesting song is similar in character, but longer and varied somewhat by individuals.

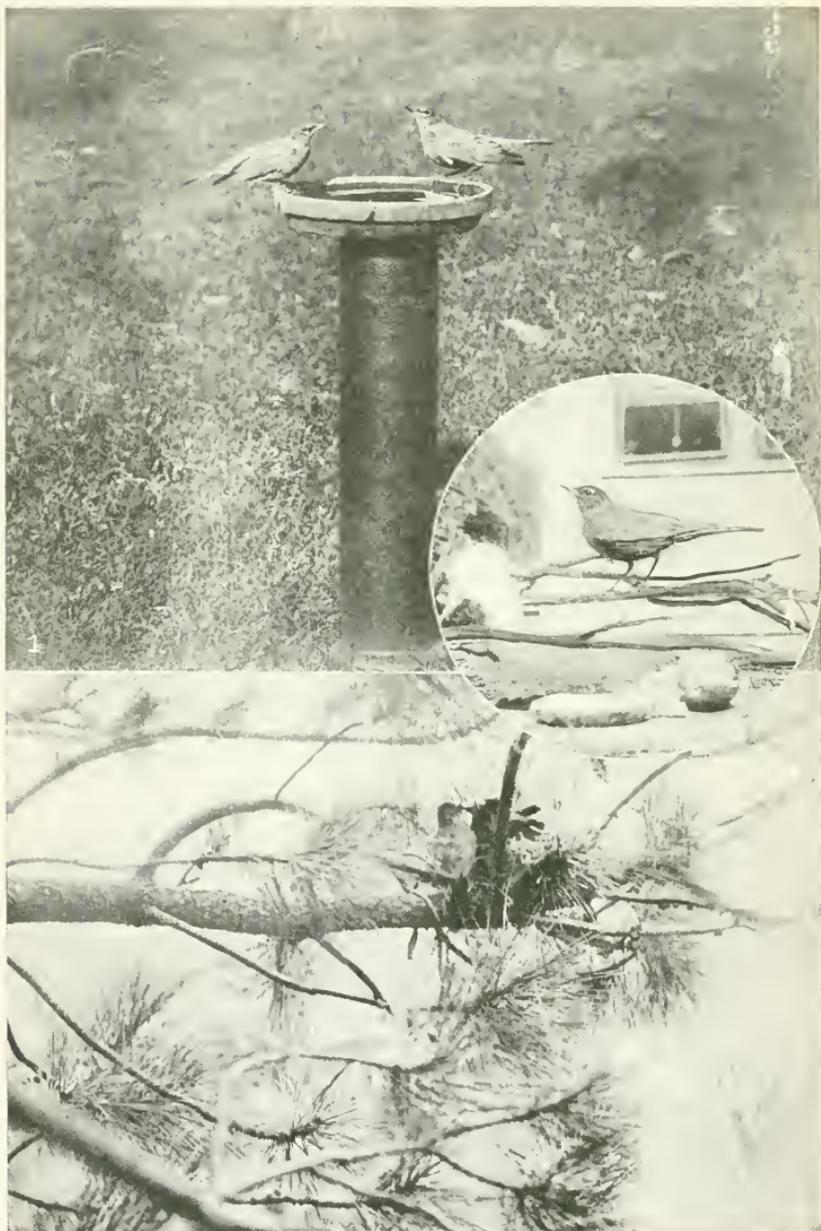
Mr. Dawson describes a nest which he found about thirty-five feet from the ground in a sixty-foot fir tree. It was made mostly of the drooping brown moss so prevalent in that district, and well concealed, being simply a shade thicker than the rest of the limb. Besides the moss it was made of vegetable down, cottons from pussy willow and cottonwood trees, hair, fine grasses in abundance, and other soft material. The lining was exclusively feathers, those of Robins' breast being most abundant.

There were nine eggs in that cosy nest among the firs. What an entrancing sight it would be to behold a pair of Kinglets with such a family of fluffy young! It would be well worth the patience and study to find them. It was only by chance that Dawson came upon this treasure, he happening to see, through his binoculars, the owner going to it.

The Kinglets are among our most useful birds. They are solitary in that they do not forage in flocks, but



VERDIN AND NEST.



WESTERN ROBINS.

often there are several in a neighborhood all busy at work. One need but watch them five minutes to be convinced that they are helping rid the trees of tiny insects, eggs, etc., which would be overlooked by a larger bird.

GENUS REGULUS: SITKA KINGLET.

Sitka Kinglet: *Regulus calendula grinnelli*.

FAMILY—KINGLETS AND GNATCATCHERS.

ON the Pacific Coast from Alaska to the middle of California is found a bird known as the Sitka Kinglet, also Alaskan, and Grinnell's. It is similar to the Ruby-crowned, but is smaller and the plumage is much darker, the upper parts being sooty-olive with sides of crown and dark of wings almost black; under parts dusky gray. The birds do not breed in the United States, and are the only form found in the winter-time in Washington.

GENUS POLIOPTILA.

SUBFAMILY—POLIOPTILINÆ: GNAT-CATCHERS.

THE Gnatcatchers are among our daintiest and most useful birds. They are less than five inches long and the tail is about half the length of entire body. The name, *gnat* catcher, is a misnomer, since the birds like tiny green worms, millers, and many other insects. Economically, they are entirely beneficial and should be protected wherever found. They have been called very *natty* little birds and, indeed, they are, their plumage being trim and well kept, their long, slender bodies accentuating their appearance. They are restless migrants, being seldom quiet a minute; flying from one low

tree, shrub, or weed to another in short flights, hopping from twig to twig, flirting their long, expressive tails as they go. They are not gregarious, but go about alone or in pairs. One familiar with their call can never mistake it for anything else, and can easily keep track of their movements, for they keep up this nasal, twanging note as they forage. The male has a sweet little song which partakes of the nasal twanging. It is a low, pleasing warble, heard usually only at the nesting season.

The nests are the daintiest of cup-shaped affairs, made of bark and similar material, lined with feathers, and placed in bushes and trees from a few feet up to twenty, or more.

GENUS POLIÓPTILA.

Blue-gray Gnatcatcher: *Polióptila cærulea cærulea*.

SUBFAMILY—GNATCATCHERS.

IN the eastern and middle States, extending as far west as eastern Nebraska, is found the Blue-gray Gnatcatcher, a bird not seen on the Pacific Coast. His upper parts are a blue-gray, which become bluer on the head; forehead and line over the eye (of the male) is black; the under parts are blue-white, the tail being black, save for exposed outer feathers, which are white.

The birds are summer residents, only, in most of their breeding range, going south during the cold weather.

Chapman says of them: "The Blue-gray Gnatcatcher frequents rather densely foliated trees, generally in the woods, showing a preference for the upper branches. He is a bird of strong character, and always seems to me like a miniature Mockingbird with some of the habits of Kinglets. His exquisitely finished song is quite as remarkable as the ordinary performance of his

large prototype, but is possessed of so little volume as to be inaudible unless one is quite near the singer. His characteristic call note—a rather sudden *ting*, like the twang of a banjo string—can be heard at a greater distance.”

GENUS POLIOPTILA: WESTERN GNATCATCHER.

Western Gnatcatcher: *Polioptila cærulea obscura*.

SUBFAMILY—GNATCATCHERS.

THIS bird resembles its eastern cousin, Blue-gray, the chief difference being that it is duller in coloring, the black line over the eye of male being less pronounced, and the white of outer shaft of outer tail feather, more restricted.

It is found nesting from Siskiyou County, California, southern Nevada, southern Utah, and Colorado, south; wintering from southern California, and southern Arizona, south. It is fond of mountain canyons and brush-covered foothills for nesting, but wanders down into the valleys during the winter months, where its nasal *tzee*, *tzee*, may frequently be heard. In their best plumage the birds are often quite *blue* on upper parts which will help the novice in their identification, no other similar sized bird having this hue.

One July I came upon a nest of one of these Western Gnatcatchers in a little canyon in the Sierra Madre Mountains in Los Angeles County. It was placed about ten feet from the ground in the upright crotch of a holly bush which had grown tall like a tree. It was a small, dainty cup, made of fine bark and fibers which just matched the gray crotch, and was in plain sight, though shaded by overhanging leaves.

There were three young and the parents were busily feeding. The two adults were alike in coloring, no black malar stripe showing on the male to help us designate him. However, one bird, which my companion and myself decided was the female, had a new outer tail feather coming in on one side, so that we easily told the two apart.

These Gnatcatchers had a queer way of approaching the nest. Never did they fly right to it, but always they first came into a near-by holly and, after flying about in the branches, flew across the short intervening space to the nest.

In the first three hours in which we watched them on July 9th, the birds fed fifty-four times, an average of three and one-half minutes apart. The shortest interval was one-half minute, the longest nine, the male feeding about twice as often as the female. Several times they both came at once and it was amusing to see them hurry to reach the nest. It was quite evident that the male had no idea of letting his mate feed first, but with a grand scramble and mad rush through holly tree, both birds rushed for the nest, and usually reached it at the same time and fed together.

About ten o'clock the sun began to beat down upon the nest. I knew how hot it was, for I had for some time been slipping along on my stone seat in order to avoid it. Presently, when the father came, he took in the situation for, having fed, he slipped onto the nest and sat lightly above his skinny offspring. For five minutes he shielded them before the female came and took her turn, shading them with outstretched wings. During the eleven minutes in which the female stayed on the nest, the male came three times with food for her, which she, in turn, fed to the nestlings beneath her. In the hour in which the sun beat down upon the nest the male shielded the young four times. Usually he left

when the female came with food, but once he remained and she fed the babies. It was interesting to note that when the female was on the nest the male gave his food for the young to her, while when the male brooded the female fed directly to the young.

Once I saw these midgets drive a California Shrike from their neighborhood. He was minding his own business some distance away, but it was quite evident that they mistrusted him, and he had to go.

The night before we left this canyon another Gnatcatchers' nest was found built on the south side of a tall, straight sycamore tree about twenty feet from the ground, its only supports being the tiny twigs which grew out from the side of the tree. There were three young birds and they were fully feathered and looked just like their parents, save for their shorter tails. They were very uneasy and it was evident that they would not stay long in the nest. In two hours of watching we saw them fed one hundred and five times. When we consider that probably several insects were taken at each feeding, that their day was about sixteen hours long, that about four weeks of this feeding would be required for the young, and that during all this time the old birds must also have eaten, we have a little idea of the thousands of insects that this one family was consuming in a few weeks' time, and can better appreciate the enormous good they were doing in that little canyon.

At 7:35 A. M. on this last morning of our stay, we believed that our fondest hopes were to be realized, and that we were to see these nestling make their debut into the world; for suddenly one fluffy ball came fluttering forth from its gray home, and landed on one of the twig supports. But, alas, all too quickly our hopes were crushed, for no sooner had the nestling stopped himself than he turned about and scrambled, post-haste, back into the nest, where he cuddled down as if he were

glad to rest after this great exertion. Again in the afternoon, about 5:30 o'clock, a young bird left the nest. Standing on the rim, he fluttered his wings twice, as if trying to get up courage, and then the third time he flew out onto a twig, perhaps six inches from his home. This time, as before, the stay was a short one, the bird hurrying back to the nest, as in the case of the morning trial.

And so, all at home, we were obliged to leave them, but we were glad to know that, contrary to most nestlings, they returned to the nest after having once left it.

GENUS POLIOPTILA: PLUMBEOUS GNATCATCHER.

Plumbeous Gnatcatcher: *Polioptila plúmbea*.

SUBFAMILY—GNATCATCHERS.

FROM southeastern California, southern Nevada, central Arizona, west central New Mexico, and the Rio Grande Valley, south, is found the Plumbeous Gnatcatcher, which differs from the Western chiefly in having the top of the head a glossy blue-black, and the inner web of the outer tail feather *tipped* with *white*; the female and young are similar but lack the black cap. It differs from the Black-tailed in having the outer web entirely *white*, the *black* stripe being missing. Surely a small thing to make the difference, and one that will require a strong glass and quick observation to differentiate. However, the location of the bird will help in the identification, it being abundant in Texas, rather than farther west.

GENUS POLIOPTILA : BLACK-TAILED
GNATCATCHER.

Black-tailed Gnatcatcher: *Poliioptila californica*.

SUBFAMILY—GNATCATCHERS.

THE Black-tailed Gnatcatcher is found, locally, on the bushy mesas, washes, and foothills from Ventura County, California, south along the Pacific Coast to Lower California.

This bird differs from the Western in having a black cap, being darker gray above and below, and in having the outer tail feather with outer *web black, edged with white*, as well as a white spot at tip of inner shaft. The female lacks the black crown, but the white spot on tip of inner shaft will help distinguish her from Western, if one be fortunate enough to see it.

One cannot help wondering just why this bird was not called *black-capped* instead of *tailed*, since the other species also have black appendages.

These midgets are not so abundant as the Western, but they are similar in habits and easy to identify.

Mrs. E. J. Saunders, of Whittier, California, wrote concerning a nest found near her home: "It was built in a greasewood bush not more than three feet from the ground. The bush grew on the south slope of an arroyo, or the lower end of a small canyon, that extends up into the hills east of Whittier. There is a dug road along the side of the arroyo, or canyon, and the nest was about level with the wheel-tracks of the road, and not more than eight feet from the tracks. I first saw the Black-tailed on April 18th. I had never seen them here before. On April 22nd we found the nest containing young birds. It was a very beautiful nest, firmly built of fine material."

FAMILY—TURDIDÆ: THRUSHES, SOLITAIRES,
STONECHATS, BLUEBIRDS, ETC.

THIS family contains some of the best known, most beloved members of the feathered world. The Robin and Bluebird are the brightest plumaged, as well as the most sociable, being dwellers of the dooryard and orchard; while the Thrushes are dull-plumaged and inhabit wooded regions, although some of them are also dooryard visitors. These birds are insectivorous and, for the most part, migratory. In subfamily TURDINÆ, which contains the true Thrushes, the juvenal plumage is always more or less spotted.

Many members of this family are famed as rare songsters. While the music lacks the volume and force of some singers, in sweetness and expression few birds excel them. These singers—the Thrushes—are dull colored, but in spite of that, they are most charming. There is a quiet grace, as well as a distinguished carriage, that few birds have, which, I believe, endears them to all beholders.

GENUS MYADESTES: TOWNSEND'S SOLITAIRE.

Townsend's Solitaire: *Myadestes townsendi*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

SUBFAMILY—MYADÆTINÆ: SOLITAIRES.

IN the Townsend Solitaire we have a bird which so differs from the rest of the family as to be given a sub-family by itself. It is a bird of the mountain solitude, breeding from as far north as Alaska south through the Sierra Nevada Mountains to the San Bernardino range, California, and through the Rocky Mountains to Arizona and New Mexico; wintering from southern British Columbia and Montana southward, straggling to central Texas, Kansas, and Illinois; accidental in New York.

The adults are about eight inches long and a smoky-gray in general coloring, with under parts lighter. There are two light wing bars and a buffy spot; a white eye-ring, and the outer web of outer tail feather, and tip of inner web is a soiled white. The young are spotted above and below.

It is named for J. K. Townsend, the pioneer ornithologist of the Pacific northwest, who is supposed to have first seen it in or near Washington. In habits the bird seems to partake both of the Flycatchers, darting out and catching insects as do the members of this family, and the Thrushes, slipping quietly through the woods and moist, shady places, Thrush-like. Coues calls it the Townsend Flycatching Thrush and says of it: "A bird

not less strange and unlike anything seen in the east than the *Phainopepla*; inhabiting woodland and shrubbery, feeding on insects and berries, and capable of musical expression in an exalted degree. Nest on the ground or in rubbish near it, loosely made of grasses; eggs about four, bluish white, flecked with reddish brown."

Dawson, in his "Birds of Washington," gives a good account of this curious, but most interesting bird.

All who have heard this bird testify that he is a beautiful singer, in that particular, at least, proving his kinship to the Thrushes. Mrs. Bailey speaks of a low evening song heard in the Sierra Nevadas at an elevation of seven thousand, nine hundred feet; and adds: "At other times, and when not on guard, the bird's song would fairly ring through the air. When given freely it is a strong, clear song with a flavor of its own. Heard from the tips of the highest trees on the crest of the range, as it so often is, the song has the freshness and invigoration of the air from the snowbanks, and is given with the strong freedom of the mountain tips. In the rocky solitudes of the Garden of the Gods it is said that the Solitaire's voice is all that breaks the silence."

On April 27, 1920, one of these birds was seen in the Edendale foothills, Los Angeles, by two enthusiastic Audubon members. They were, indeed, fortunate, as the bird is rare, even in migration.

GENUS HYLOCICHLA: RUSSET- BACKED THRUSH.

Russet-backed Thrush: *Hylocichla ustulata ustulata*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

ONE of the best known, most widely distributed members of this genus on the Pacific coast is the Russet-

backed Thrush, which breeds from Alaska to southern California (San Diego County), wintering in South America.

It is about seven and one-half inches long, the upper parts being a rather uniform olive-brown, with buff eye-ringing; the throat and chest are buffy, marked with brown triangular spots, which are smallest on the throat; rest of under parts white, with sides olive brown.

The eastern representative of this bird is the Olive-backed, which is also found breeding in some places in the west, notably the northern mountain districts and eastern Washington. It differs from *ustulata* in being grayer with a more *olive* cast, ground color of under parts a *lighter buff*, and sides *grayer*. The ordinary observer would see little difference in the two birds, and it is well for them that, for the most part, their range is so widely separated.

These attractive birds appear in my yard in Los Angeles early in April and usually one or two of them stay about for a week, or more. One year two of them stayed about for two weeks, singing a good deal of the time until I began to hope that they would decide to nest in some of the shrubbery. However, so far they have passed me by and gone to the near-by arroyo to raise their young.

They are certainly charming birds, not at all shy as they run about on the lawn and under the trees in their quick way, suddenly stopping and with a jerk of the tail and quick quiver of the wings, watching you out of their big, brown eyes, until you pronounce them almost human. *Whit, whit*, they call in a mellow whistle which is sometimes loud and clear, and again a mere shadow of a sound. If you whistle, they will answer back and come quite close in an effort to find the performer. I have often called one of these Thrushes to me in the canyons, he flying back and forth very close in an effort

to locate a comrade, I suppose, or perhaps in mere curiosity to see what object dare attempt to imitate his liquid note.

Besides the insect life found in the mulching about the trees in the garden, these Thrushes also eat the berries of the pepper trees, as so many other birds do.

The song that I have so often heard in my garden is frequently only a whisper song, sung at all times of day, but toward evening ringing out much louder. So attuned to this song have my ears become that, even when it is scarcely more than a breath, it reaches me, and in reverence I also breathe, "Listen, the Thrush is singing."

The song, which I believe is the best the bird has, for I have heard it elsewhere and at the nesting season, has something of the quality of the Veery. Translated into words, which at best are poor substitutes, it runs, *Tra-weé-ah, tra-wée-ah, tra-wée-ah*, sometimes ending in a shuddering sort of note. Sometimes this latter note is given by itself and before the other phrases are given. The whistling call note has, also, been compared to that of the Veery.

One nest of these birds which I watched was found in the most unexpected place in a most unlooked-for way. In fact, I was watching the nest of a Yellow Warbler in a Los Angeles park, and although I had heard the Russet-backed singing not far away, no thought that he and his mate would pick out a place so popular for humans when more secluded spots were at hand, entered my head. To be sure, this park, although constantly filled with picnic parties at that time of year, is just beside the canyon-like Arroyo Seco, through which runs a liquid stream, and which is in a district not thickly populated.

As a companion and myself watched the Warbler's nest, something brown darted past us. At first we paid

no especial attention to this brown streak, but presently we noticed that it kept going into a pine tree that grew beside us and on further investigation we easily located the nest, which was placed about twelve feet from the ground, about half way between the end of the pine branch and the trunk of the tree. It was a bulky affair, being placed in a piece of eucalyptus bark which had lodged in the pine tree, and whose leaves almost concealed the nest. The bird was bringing in fine fibers which were evidently the finishing touches. Her manner of coming and going was in the straight, even flight of these birds, full of business with no loitering by the wayside. So quietly and rapidly did she work that it required a constant watch not to miss her coming and going. In twenty-five minutes she made six trips, staying each time about two minutes in arranging the material and shaping the nest.

For several more days the female fussed over that nest, and once I saw her mate inspect it, but she seemed to be doing the building.

It was June 1st before brooding began. Sometimes I heard the male singing in the distance, but for the most part, it was as quiet about the nest as if no birds were there. The female did not in the least mind my watching her and slipped off for food, and back again in her quiet way.

The last time I watched at the nest, June 25th, there were three fully feathered nestlings, and they were the sweetest of bird babies, that quite resembled their parents. They were making a weak noise and stirring about in the nest.

In an hour's watching the old birds came with food ten times, feeding more than one bird each time and that more than once, showing that many insects were fed each time.

As I watched one of the young birds hopped from

the edge of the nest onto a little twig beside it. He paused a moment and then went back and made his way along the rim before returning to it. I was not present at the departure of the nestlings, which I presume occurred soon after my visit.

GENUS HYLOCICHLA: HERMIT THRUSH. (Eastern.)

Hermit Thrush: *Hylocichla guttata pállasi*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

THERE are several forms of the Hermit Thrush, all being subspecies of the Alaska Hermit, which is found only as a migrant in this country, crossing from the northwest across Washington, Oregon, Nevada, and New Mexico. Audubon's Hermit breeds in the Rocky Mountain region from Montana south to Nevada, Arizona, and New Mexico; wintering in Texas and south. These birds resemble the others in plumage and ways and will not be dwelt upon here.

The form under consideration is a dweller of eastern North America and our United States. It breeds south to central Minnesota, northern Michigan, Ontario, Massachusetts, Connecticut, Long Island (locally), and mountains of Pennsylvania and Maryland; wintering from Massachusetts (locally) and the lower Delaware and Ohio Valleys to Texas, Florida, and Cuba.

It is a little over seven inches long, and the upper parts are a rich olive-brown, with the tail a *rufous* shade which is quite different from the back, making a distinctive marking for this species. The throat and breast have a slightly buffy tinge, the feathers on side of throat having black, wedge-shaped markings, while the breast

has round spots. Since this is the only Thrush having the tail *brighter* than the back, it is easy to identify.

Though these birds are sometimes seen along the wooded roadways, and even at times venture to the haunts of man, they are primarily dwellers of the forests and must be sought for if seen. Though of a retiring disposition, it is not a really shy bird. Besides having the habit of slightly lifting the tail when perching, the twitching of the wings is a Thrush trait. It is similar to that given by the restless little Kinglet.

Most writers attribute one of the finest songs to this bird; it is of interest, therefore, to note that so keen an observer as Wilson seems to think the bird almost voiceless. In comparing it with the Wood Thrush he says that it is "altogether destitute of the clear voice and musical powers of that charming minstrel." Again, speaking of the rarity of the bird in Pennsylvania, he says: "In both seasons it is mute, having only, in spring, an occasional squeak like that of a young stray chicken." Surely a queer comparison for the liquid note of the bird.

In another particular Wilson's account differs from those who have observed this Thrush in the north. There it is listed as nesting *on the ground*, in damp, wooded places or thickets, building a large nest of pine needles, mosses, leaves, and fibers. Wilson tells of finding one of them nesting in the cane swamps of the Choctaw nation on the 12th of May, the nest being *on a horizontal branch* immediately over the path. He says: "The female was sitting, and left it with great reluctance, so that I had nearly laid my hand on her before she flew. The nest was fixed on the upper part of the body of the branch, and constructed with great neatness; but without mud or plaster, contrary to the custom of the Wood Thrush. The outside was composed of a considerable quantity of coarse rooty grass, intermixed with horsehair, and lined with a colored, thread-like grass,

perfectly dry, laid circularly with particular neatness. The eggs were four, of a pale greenish blue, marked with specks and blotches of olive, particularly at the great end."

Most authorities agree that the Hermit Thrush is the sweetest singer of the tribe. There is a purity and sweetness in the tone that few birds can equal, and none excel. Heard in the quietude of the forest, among the murmuring leaves, it is a never-to-be-forgotten strain.

GENUS HYLOCICHLA: DWARF HERMIT THRUSH.

Dwarf Hermit Thrush: *Hylocichla guttata manus*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

ON the Pacific coast, breeding from Alaska to British Columbia, wintering south to California, Arizona, and New Mexico, is found a similar bird, which is called the Dwarf Hermit Thrush. It differs from the eastern form in being darker colored. The top of head and rump are more russet, the tail more chestnut, and spots on breast browner.

In southern California it is a common winter resident, being found not only in the canyons and wooded places, but also coming into the gardens, where it shows no signs of fear. Its abundance is variable, however, being extremely abundant some years and at others quite rare. In my own yard they stay about on the ground, tilting their tails, twitching their wings, and regarding me with their big brown eyes in a most friendly way. At a friend's yard on the bank of the arroyo one of these birds came daily to the bird table to partake of crumbs and suet. Its manner of coming and going was different from that of any other bird. We would hear a *chuck*

note and on a shrub below behold a poised bird. In short flights, from bush to bush, with a little hopping on the ground, slowly, as if making sure that its welcome was assured, it approached. But how different was the departure. When its appetite was satisfied, or if something startled it, with a quick downward swoop, it had disappeared into the depth below and only a brown streak marked its going.

Though usually we hear only the single note of this bird, sometimes before it goes north it sings its song. Dr. Joseph Grinnell once wrote me that he considered it the sweetest of Thrush music. To me, also, it seems more liquid, and in some indescribable way, sweeter. One familiar with the music of any of these Thrushes will be able to tell what kind of bird is singing, if he is not always able to designate the species. A song which I heard one of these Dwarf Hermits singing in the Yosemite Valley, consisted of two phrases, given with a pause between and the last half sung in a higher pitch. That peculiarity helped me identify the song.

We are told that another of these Hermit Thrushes breeds in the coast belt in California from northern Trinity County to southern Monterey County, occurring farther south in migration. This is the Monterey Hermit (*H. g. slévini*).

Sierra Hermit Thrush: *Hylocichla guttata sequoiensis*.

ON the west coast, breeding from British Columbia to the high mountains of southern California, is found still another subspecies of the Hermit. It differs from the eastern form in being larger, paler, and grayer. J. Grinnell found this Sierra Hermit common in the canyons along the north spurs of San Gorgonio Peak, San Bernardino Mountains. Many nests, old and new, were found in June, 1905, and 1906, above 6,300 feet altitude.

Other nests in other years are recorded, one of which contained, in June, a set of five well-incubated eggs.

GENUS PLANESTICUS: ROBIN.
(Eastern.)

Robin: *Planesticus migratorius migratorius*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

PROBABLY the Robin is one of the best known members of this family, living as it does in the northeastern United States during the summer, wintering in the southeastern portion, and migrating across country to Alaska, so that it is also found, sparingly, in the northwestern States, as a migrant.

It hardly seems necessary to describe this familiar bird, and yet there are people who do not know it. It is nine and one-half inches in length, the bill being one inch long and usually yellow, although sometimes it is tipped with dark, or entirely so; the head, neck, wings and tail are black, the inner tips of two exterior tail feathers being white, and the margins of wings are ashy; rest of upper parts grayish slate, the white throat is streaked with black; there is a white spot above and below the eye, and the belly is white; but the thing which has given the bird the name of Robin Red-breast is the brick-red under parts which, though bright, are by no means *red*. The long legs are dark and the claws strong.

While some of these birds spend their winters in the north, for the most part they are summer residents, being among the earliest spring arrivals, enlivening the dreary month of March by their songs. They are, indeed, harbingers of spring and are hailed with delight after the cold of winter. Their friendly way of running



HERMIT THRUSH.



VARIED THRUSH.

Copyright by Brown Brothers.



Copyright by Brown Brothers.

WESTERN BLUEBIRDS.

over the lawn, stopping abruptly and with head cocked on one side to inspect a possible find, delving down and bringing up a worm, is familiar to all dwellers east of the Great Plains.

They place their nests in trees, buildings, walls, almost any place will do, building large, bulky affairs of twigs and leaves, rags and string, binding all together with mud, which Madam pounds in with her feet as she sits in the nest. The eggs are a beautiful green-blue color, which is much used by mortals, being called Robin's-egg-blue. The young birds have speckled breasts and backs for the first weeks of their existence.

It is the habit of the male birds and young to congregate in trees for the night, the males returning in the day-time to assist the female with her second brood. Bradford Torrey, in "The Foot-path Way," gives a wonderful account of a Robin roost which he watched in Massachusetts, July, 1889. He found them going to an isolated piece of swampy woods, a few acres in extent, mostly a dense of gray birches and swamp white oaks, but with a sprinkling of maples and other deciduous trees. Quoting briefly from his account: "Thus far I had always been too late to witness the beginning of the flight. On the evening of August 1st I resolved to be in season. I reached the border of the pond at 5:15, and at that very moment a single Robin flew into the wood. No others were seen for eighteen minutes, when three arrived together. From this time stragglers continued to appear, and at 6:30 I had counted 176. In the next ten minutes 180 arrived; in the next five minutes, 138. Between 6:45 and 7, I counted 549; then in six minutes, 217 appeared. At 7:25, when I concluded, the figures stood at 1,533 birds. For about twenty minutes, as will be noticed, the arrivals were at the rate of thirty-six a minute. Throughout the thickest of the flight I could keep a lookout on only one side

of me, and, moreover, the gathering darkness was making it more and more difficult to see any birds except such as passed above the dark tree line; and from what went on just about me, it was evident that the number of arrivals was increasing rather than diminishing as my count fell off. There seemed to be no good reason for doubting that at least two thousand Robins entered the wood at the extreme end." Mr. Torrey spent many nights watching the in-coming of these birds and his account of the wonderful sight is well worth reading.

This habit of roosting in large flocks has led to the slaughter of hundreds of them in a night by the market-hunters of the south. In central Tennessee large tracts of cedars attract myriads of birds for the berries, of which they are very fond. We are told that one small hamlet in this district annually sends to market five hundred dollars' worth of Robins sold at five cents per dozen, equal to 120,000 birds.

We certainly hope that the Federal Migratory Bird Bill will end this needless slaughter of our Robins.

The song of the Robin is loud and melodious, and it is given throughout the day, all summer long, so that it is a well-known and welcome note. There are various call notes; one is *Tut-tut*, and another, *Wheat, wheat*, in a high-pitched tone.

Experiments with young Robins has brought out the fact that they daily consume one half their own weight. We are told, also, that a grown bird requires one third its own weight daily. An instance is given where a young Robin was fed from 50 to 70 cutworms and earthworms a day for fifteen days; and on one day the bird ate 165 cutworms, or one and five-sixths times its own weight. In view of such testimony as to the great economic value of these birds, as well as from an esthetic standpoint, it seems a great pity that any of them should be killed.

GENUS PLANESTICUS: WESTERN
ROBIN.

Western Robin: *Planesticus migratorius propinquus*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

ON the western coast, breeding from Alaska to southern California, and from the Pacific coast east to the border of the Great Plains, wintering from British Columbia and Wyoming south to Guatemala, is found the Western Robin, which differs from its eastern cousin in lacking the white tips to tail feathers. It has the same gray back, black head, tail and wings, striped throat and rufous breast. Along its southern range it nests in the mountains, coming into the valleys, foothills, and cities only during the winter and late spring months. They are very fond of the berries of the pepper trees and sometimes whole flocks of them will be about on the ground, and in the trees eating them. Again, I will have only a bird or two in the garden all winter long.

The call note resembles that of the eastern bird, and the song is also unmistakably that of a Robin. In Oregon and Washington the birds nest about the streets and homes, sing their rollicking song, build their bulky grass and mud nests, and save for the white tail-tips, are the same jolly birds that we knew "back east."

I regret having to record that because of their fondness for cherries and olives in the west, many of these interesting birds are killed, despite the fact that they are protected by law. The birds prefer wild fruits and it is believed that when raids are made in orchards it is because of a lack of wild berries. We are advised to plant the Russian mulberries along the devastated orchard, rather than to kill birds that eat so many cutworms, caterpillars, weevils, and other noxious insects.

The winters of 1919 and 1920 my yard was full of these birds, drawn there by the berries on my big pepper trees and by the water which was always out, and which they seemed to need after eating the peppers. Like the Cedar Waxwings (and for that matter other birds) they disgorge the inner hard pellet of the berry, the drinking basin often being full of them. These Robins freely sang their song, which took one back to the east, where it is so common a melody.

GENUS IXOREUS: VARIED THRUSH.

Varied Thrush: *Ixoreus naevius naevius*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

THE Varied Thrush, also known as the Oregon Robin, Painted Robin, Mountain Robin, etc., resembles the Robin in size and coloring, but is handsomer. It is about ten inches long; has dark slate upper parts with tips of outer tail feathers white. The breast, two wing bars, and a stripe over the eye are a bright orange brown; side of head and a crescent across the breast is a dull black.

It is to be regretted that this most beautiful of all the Thrushes is a resident only from northern California, north, and is seen throughout the rest of the State as a rare winter visitor, only, coming as far south as the Colorado River. It is reported as accidental in Kansas, New Jersey, New York, Massachusetts, Quebec, and Guadalupe Islands.

One May I had the pleasure of calling upon these birds in their chosen haunts among the big Sequoias, beside a trickling stream, in Eureka, California. Well did they fit into the quiet and grandeur of this wonderful spot. In these same woods we saw Russet-backed

and Dwarf Hermit Thrushes, as well as plenty of Robins. I also enjoyed seeing White-crowned and Golden-crowned Sparrows which had been gone from the southern part of the State for a month, but here, at the edge of the forest, were singing their melodious songs.

We found the Varied Thrushes running about on the ground, in size and manners quite resembling the Robins. But the song was entirely different from any other and once heard could never be forgotten, or mistaken. It is a weird, but inspirational one, consisting of single, long-drawn notes, given in different keys, in a slow, measured way as if life held no haste for the performer. Some of them were high in pitch and almost a trill, reminding one of the shuddery note of the Russet-backed. In its measured intervals this song reminded me of the three notes of the Golden-crowned Sparrow, although the tone was entirely different. This song of the Thrush can be imitated by man, but it is necessary to give a vocal undertone with the whistle. W. Leon Dawson, who has lived among these birds in Washington, gives a good imitation of their wonderful notes.

Whenever I think of that damp, dark park shaded by those majestic Sequoias, in fancy I see these large, handsome birds and hear their indescribable notes.

The nest is a large, bulky affair, which is placed right out in the open, near the top of a small evergreen tree. For support the nest is placed near the trunk of the tree, unless some interlacing branches offer suitable support. The eggs are usually three and they are greenish blue, speckled or spotted with dark brown. Two broods are raised from April to July.

GENUS IXOREUS: NORTHERN
VARIED THRUSH.Northern Varied Thrush: *Ixoreus naevius*
meruloides.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

A SUBSPECIES of the Varied Thrush breeds in the northwest, being found in the mountains as far south as northwestern Montana and northeastern Oregon; wintering mainly in the interior of California south to Los Angeles County. They differ from the preceding in being paler and grayer.

In their southern range they are rare enough to make one feel a thrill of joy when coming upon them. Only a few times has it been my privilege to do so. The first time a friend and I were resting under a live oak tree on the densely-shaded hillside which bordered a body of water. It was February and we had been enjoying the Pipits that were flying over the fields, or skirting the edge of the water, and had thought ourselves favored when a Dwarf Hermit Thrush had paid us a call. All at once, without any warning, two of these large northern birds appeared under a tree close beside us. Though we scarcely breathed in our effort to obliterate ourselves, the birds only stayed a few minutes, running quickly about and gradually working themselves out of our sight. They gave no notes and we saw them only the once. At another time two of them were seen in the bare sycamore trees near the bank of the arroyo, where we were obliged to be satisfied with watching them through our glasses.

GENUS SIALIA: BLUEBIRD. (Eastern.)

Bluebird: *Sialia sialis sialis*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

THE Bluebird is another member of the Thrush family that is known and beloved by all. With Robin Red-breast he heralds the coming of spring throughout the eastern States, and because of his bright plumage and pleasing ways, delights all beholders. It is about six and one-half inches long and a beautiful bright blue above with chestnut under parts, save the lower breast, which is white. The female is duller than her handsome spouse, her wings and tail flashing blue, while her head and back are grayish.

It is not alone the plumage of these birds that makes them beloved, but rather is it the gentle dark eye that looks into yours with such confidence, and the modest ways—which we humans might well imitate—that makes us love the Bluebirds.

The eastern Bluebird is found casually west to the Rocky Mountains in Montana, Wyoming, and Colorado; wintering most commonly south of the Ohio Valley and the middle States.

Wilson says: "Though generally accounted a bird of passage, yet so early as the middle of February, if the weather be open, he usually makes his appearance about his old haunts, the barn, orchard, and fence posts. Storms and deep snows sometimes succeeding, he disappears for a time, but about the middle of March is again seen, accompanied by his mate, visiting the box in the garden, or the hole in the old apple tree, the cradle of some generations of his ancestors."

Of late years many of these friendly birds have been

driven from the boxes placed for them by their human admirers by that impudent intruder, the English Sparrow. Mr. Nehrling suggests that boxes be placed with no perch beneath, since the Bluebirds can go directly to the hole, while the clumsy Sparrows must have a foothold.

Nuttall says: "The song of the Bluebird, which continues almost uninterruptedly from March to October, is a soft, rather feeble, but delicate and pleasing warble, often repeated at various times of the day, but most frequently in early spring, when the sky is serene and the temperature mild and cheering. At this season, before the earnest Robin pours out his more energetic lay from the orchard tree or fence-rail, the simple song of this almost domestic favorite is heard nearly alone; and if at length he be rivalled at the dawn of day, by superior and bolder songsters, he still relieves the silence of later hours by his unwearied and affectionate attempts to please and accompany his devoted mate. All his energy is poured out into this simple ditty, and with an ecstatic feeling of delight he often raises and quivers his wings. . . . On harkening sometimes to his notes, an evident similarity to the Thrush is observable; but the accents are more weak, faltering, and inclined to the plaintive." Translated into words he says the bird seems tenderly to call in a whistled tone, *hear—hear bŭty, bŭty?* or merely *hear—bŭty*, and instantly follows this interrogatory call with a soft and warbling trill. The plaintive note given in fall is *tshay-wit*, or *tŭr-wee, tŭr-wee*, as it is sometimes interpreted.

With the coming of winter the birds band together and go south, where they rove about through the woods, eating berries and insects. Economically, they are beneficial because of their fondness for grasshoppers, beetles, caterpillars, and other noxious insects.

GENUS SIALIA : WESTERN BLUEBIRD.

Western Bluebird: *Sialia mexicana occidentalis*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

THE Western Bluebird is found on the Pacific coast breeding from British Columbia east to northern Idaho and western Montana, and south to the San Jacinto Mountains, southern California; wintering south into Lower California.

Not only are these western birds different in plumage from the eastern form, but in ways they also vary. The blue upper parts are broken on the back by dull chestnut and the *throat* is *blue* instead of chestnut like *sialis*; breast chestnut and rest of under parts dull purplish and gray.

In southern California they are winter visitors—for the most part—where banded together they flit about in the open fields, and are gone to the higher altitudes for nest-building. Never have I known them to occupy a bird box as do their eastern cousins. However, there is some consolation in the hope that in time we may coax them about our homes, since some of them are nesting in the parks of Los Angeles, and near-by canyons.

In another way they differ from the type in that they do not sing. A soft *pú-it*, almost a whisper, they often give, but never have I heard the eastern song, although I have watched them during the nesting season and other times of year. In Washington, where Mr. Dawson has watched them for many years, he reports that they have no song, and I feel that we must abide by the decision of so eminent an authority.

In their gentle, quiet way they are like the eastern species. Finley in his "American Birds" tells of a pair he watched in Oregon that raised one brood, and when

the second set were ready to feed, the first nestlings turned in and helped feed them until they were able to care for themselves. Surely a Utopian condition in the bird world.

We are glad that in Washington and Oregon the Bluebirds nest in boxes and in many ways seem like the birds of our childhood days.

In Sycamore Park, adjoining the Arroyo Seco, in Los Angeles, for several years now the Western Bluebirds have made their homes in the old trees and raised their young. This is a rather unusual, but very delightful, situation, which we hope will be continued and extended. I found the birds to be very tame, paying not the least attention to me as they gleaned from the lawn, or air, a few feet away. The nest was about thirty feet high in a cavity at the top of a sycamore tree that grew beside a busy thoroughfare. The female did all the brooding, leaving the nest only when the male flew up beside it, when she joined him in a foraging expedition. By the time the young had hatched the small twigs had grown up about the nest so that it was hard to watch operations. I knew, however, that both birds were kept busy feeding and that when this brood was launched upon the world, they undertook another nest in the same place. As I have said before, there was no singing, but only the softest note that many persons would not even have heard.

Farther up the State, in Tulare County, one September I was filled with delight to see large flocks of these beautiful blue birds along the roadway in the wooded mountains. They were perching on old stumps, trees, and bushes, flying before and around us as we journeyed downward.

GENUS SIALIA: CHESTNUT-BACKED BLUEBIRD.

Chestnut-backed Bluebird: *Sialia mexicana bairdi*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

THIS bird is similar to the Western Bluebird, the chief difference being that the fore-back is wholly *chestnut*. It is found in the Rocky Mountain Region from Utah, Colorado, and western Texas, south.

They are, primarily, dwellers of the mountains, breeding as high as 9,500 feet in Colorado. Sometimes, however, venturing down to the foothills to nest, and scattering through the valleys and plains during the winter and migrations.

GENUS SIALIA: SAN PEDRO BLUE- BIRD.

San Pedro Bluebird: *Sialia mexicana anabélæ*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

ACCORDING to the A. O. U. Check List, this subspecies ranges from the mountains of southern Los Angeles County, south to Lower California. Willett says of it: "The Bluebirds of the extreme southern end of the State are intermediate between this form and the last (Western), and are not typical of either." Robert Ridgeway says: "Specimens from San Diego County and southern Los Angeles County are much nearer this form than they are to *occidentális*." This bird is an abundant breeder in the San Bernardino and San Jacinto Mountains and, according to L. Belding, breeds commonly in the timbered parts of San Diego County.

GENUS SIALIA: MOUNTAIN BLUE-
BIRD.Mountain Bluebird: *Sialia currucoides*.

FAMILY—THRUSHES, BLUEBIRDS, ETC.

To the bird student in the west is given the pleasure of seeing still another Bluebird; that is, if he be so fortunate, for this bird is a lover of the mountains, only straying into the lower altitudes during the winter months, and in many localities being rare visitors, at best.

It is about seven inches long and more slender than the common Bluebird. The upper parts are a rich cerulean blue, which are paler beneath with a greenish cast. The winter plumage is dulled by brownish tips to feathers above and below. The females are subdued in coloring, having gray upper parts, which contrast beautifully, yet blend with the bright wings and tail, the blue of the under parts showing through a soft fawn color.

This gay bundle of feathers is known as the Mountain, or Arctic, Bluebird and breeds from southern Yukon south to the mountains of Arizona, New Mexico; and from the Cascade Range and Sierra Nevada to southwestern North Dakota and western Nebraska; wintering from California and Colorado south; and east to Kansas, Oklahoma, and Texas. In southern California they breed in the higher mountains, mostly on the eastern slope, south to the San Bernardino Range, sometimes during the winter months straying into the valleys and foothills to the delight of all beholders. They are rare enough to make the seeing of one a red-letter day for the bird student.

Like their cousins, they build in cavities, holes in

trees, stumps, deserted Woodpecker holes, and like places. Dawson tells of one pair which occupied the hole of a Bank Swallow, having enlarged and rounded it themselves. This surely seems a queer place for so beautiful a bird to hide its loveliness.

INDEX

- Aeronautes, 48
 Agelaius, 124
 gubernator californicus, 126
 phœnicus phœnicus, 124
 phœnicus sonoriensis, 125
 Aimophila *ruficeps ruficeps*, 188
 Alaudidæ, 97
 Alcedinidæ, 5
 Alcyones, 5
 American Ornithologists' Union
 Check List, cited, 106, 142,
 198, 200, 306, 342
 Amphispiza, 185
 belli, 186
 bilineata deserticola, 185
 nevadensis cadescens, 188
 nevadensis nevadensis, 187
 Anthus *rubescens*, 286
 Aphelocoma, 105
 californica californica, 106
 woodhouse, 105
 Archilochus *alexandri*, 53
 Astragalinus, 159
 psaltria hesperophilus, 162
 tristis salicamans, 161
 tristis tristis, 159
 Asyndesmus *lewisi*, 33
 Auriparus *flaviceps flaviceps*,
 340

 Bæolophus, 328
 inornatus griseus, 330
 inornatus inornatus, 328
 Bailey, Mr. C. E., cited, 332
 Bailey, Mrs. Florence Merriam,
 cited, 16, 49, 62, 70, 110, 117,
 128, 146, 168, 179, 182, 186,
 209, 210, 212, 218, 269, 307,
 362
 Beal, E. A. E., cited, 9, 18, 22,
 35, 76, 80, 89, 102, 108, 144,
 246, 264

 Bicknell, Mrs. T. F., cited, 326
 Biological Survey Bulletins, cit-
 ed, 9, 18, 28, 76, 89, 126,
 141, 143, 228, 246
 Blackbirds, Orioles, etc., 116-
 141
 Blackbird, Brewer, 138
 Cow, *see* Cowbird
 Yellow-headed, 121
 Bluebird, Chestnut-backed, 381
 Eastern, 377
 Mountain, 382
 San Pedro, 381
 Western, 379
 Bobolink, 116
 Bombycilla, 234
 cedrorum, 237
 garrula, 236
 Bombycillidæ, 236
 Bowles, J. H., cited, 4, 64, 67
 Brooks, Allen, cited, 148
 Bryant, Dr. Harold C., cited,
 130, 141, 290
 Bunting, Beautiful, 218
 Lazuli, 216
 Painted (Nonpareil), 217
 Snow, *see* Snowflake
 Varied, 218
 Bureau of Census (Forest Prod-
 ucts), cited, 29
 Burns, Frank L., cited, 37
 Burriga, 153
 Burroughs, John, cited, 168
 Bush-Tit, 336
 Butcher-bird, *see* Shrikes

 Calypste, 57
 anna, 57
 costae, 60
 Canary, Wild, *see* Goldfinch and
 Yellow Warbler
 Caprimulgi, 41

INDEX

- Carpodacus, 149
 mexicanus frontalis, 153
 purpureus californicus, 151
 purpureus purpureus, 149
 Carvinae, 111
 Catherpes *mexicanus conspersus*, 309
 Cedar Bird, *see* Cedar Waxwing
 Certhia *familiaris zelotes*, 317
 Ceryle *aleyon*, 5
 Chætura, 46
 pelagica, 46
 vauxi, 47
 Chamædidæ, 342
 Chamæa *fascinata henshawi*, 343
 Chapman, Frank M., cited, 86,
 117, 129, 145, 158, 191, 215,
 266, 324, 354
 Chapparal Cock, *see* Road-run-
 ner
 Chat, Long-tailed, 279
 Cherry Bird, *see* Cedar Wax-
 wing
 Chickadee, 330
 Chestnut-backed, 335
 Long-tailed, 333
 Mountain, 334
 Oregon, 333
 Chondestes *grammacus gram-*
 macus, 171
 Chordeiles, 42
 acutipennis texensis, 44
 virginianus hesperis (Grin-
 nell), 42
 Cinclidæ, 288
 Cinclus *mexicanus unicolor*,
 288
 Clamatores, 69
 Coccyges, 1
 Coccyzus *americanus occiden-*
 talis, 3
 Colaptes *cafer collaris*, 36
 Condor, cited, 49, 290, 317, 337,
 344
 Corvidæ, 100
 Corvus, 111
 brachyrhynchus hesperis, 111
 corax sinuatus, 111
 Coues, cited, 17, 79, 93, 94, 271,
 340, 361
 Cowbird, 118
 Dwarf, 120
 Creeper, California (Tawny),
 317
 Crossbill, American, 155
 Mexican, 156
 Whitewing, 156
 Crows, 111-115
 Crow, Clarke's, 113
 Western, 111
 Cuckoo, California, 3
 Ground, 1
 Cuculidæ, 1
 Cyanocephalus *cyanocephalus*,
 113
 Cyanocitta, 102
 stelleri frontalis, 103
 stelleri stelleri, 102
 Cypseli, 44
 Cypseloides *niger borealis*, 45
 Dawson, W. L., cited, 48, 94,
 102-3, 118, 136, 146, 165, 167,
 183, 186, 188, 205, 226, 232,
 262, 270, 271, 274, 277, 287,
 289, 308, 317, 325, 335, 352,
 362, 375, 379, 383
 Dendroica, 263
 æstiva brewsteri, 263
 auduboni auduboni, 266
 coronata, 265
 graciæ, 268
 occidentalis, 271
 townsendi, 270
 Dipper (Water Ouzel), 288
 Dolichonyx *oryzivorus*, 116
 Dryobates, 10
 nuttali, 14
 pubescens turati, 11
 villosus hylescopus, 10
 Edwards, H. A., cited, 49
 Empidonax, 90
 difficilis difficilis, 90
 hammondi, 94
 traillii traillii, 93
 wrighti, 95
 Euphagus *cyanocephalus*, 138
 Finches, Sparrows, etc., 142-218
 Finch, Black Rosy, 158
 Brown-capped Rosy, 158
 California Purple, 151
 Cassin's Purple, 152
 Gray-crowned Rosy, 157
 Hepburn's Rosy, 158
 House, 153
 Purple, 149
 See Goldfinches

INDEX

- Finley, Wm. L., cited, 333, 379
 Flickers, 35-40
 Red-shafted, 36
 Flycatchers, 69-96
 Flycatcher, Ash-throated, 77
 Gray, 93
 Hammond's, 94
 Olive-sided, 83
 Scissor-tailed, 69
 Silky, 241
 Traill's, 93
 Vermilion, 96
 Western, 90
 Wright's, 95
 Forbush, E. H., cited, 4, 69, 143-4, 240, 275, 348
 Fringillidæ, 142

 Garrulinae, 100
 Geococcyx californianis, 1
 Geothlypis, 274
 trichas occidentalis, 277
 trichas trichas, 276
 Gnat-catchers, 346-359
 Gnat-catcher, Black-tailed, 359
 Blue-gray, 354
 Plumbeous, 358
 Western, 355
 Goldfinch, 159
 Green-backed, 162
 Lawrence, 163
 Pale, 161
 Willow, 161
 Grackles, *see* Blackbirds
 Grinnell, Mrs. Elizabeth, cited, 2, 81
 Grinnell, Dr. Joseph, cited, 23, 25, 111, 113, 118, 215, 303, 317, 337, 344-5, 369
 Grosbeak, Alaska Pine, 148
 Black-headed, 211
 Blue, 214
 California Pine, 148
 Evening, 144
 Pine, 147
 Rocky Mountain Pine, 149
 Rose-breasted, 211
 Guiraca cærulea cærulea, 214

 Hair Bird, *see* Chipping Sparrow
 Harporhynchus, 302, 305
 Heleodytes brunneicapillus couesi, 306

 Henshaw, H. W., cited, 47, 101, 137, 222, 223, 256, 268
 Hesperiphona, 144
 vespertina montana, 146
 vespertina vespertina, 144
 Hirundinidæ, 223
 Hirundo erythrogastra, 229
 Hummingbirds, 51-68
 Hummingbird, Allen's, 64
 Anna, 57
 Black-chinned, 53
 Broad-tailed, 61
 Calliope, 67
 Costa, 60
 Ruby-throated, 51
 Hylocichla, 362
 guttata manus, 368
 guttata pallasi, 366
 guttata sequoiensis, 369

 Icteria virens longicauda, 279
 Icteridæ, 116
 Icterus bullocki, 135
 cucullatus nelsoni, 132
 spurius, 135
 Iridoprocne bicolor, 230
 Ixoreus, 374
 naevius meruloides, 376
 naevius naevius, 374

 Jay, Belding, 106
 Blue-fronted, 103
 California, 106
 Coast, 104
 Grinnell's, 104
 Oregon, 109
 Piñon, 113
 Steller's, 102
 Woodhouse, 105
 Judd, Dr. Sylvester D., cited, 143, 176-7
 Junco, 181
 hyemalis connectens, 183
 hyemalis hyemalis, 181
 hyemalis oregonus, 182
 hyemalis thurberi, 184
 Junco, Gray-headed, 185
 Intermediate, 183
 Oregon, 182
 Shufeldt's, 183
 Slate-colored, 181
 Thurber's, 184

 Kalmbach, E. B., cited, 141
 Keyser, L. S., cited, 71

INDEX

- Kingbird, Arkansas, 72
 Cassin's, 76
 Kingfisher, Belted, 5
 Kinglets, 346-353
 Kinglet, Golden-crowned, 347
 Ruby-crowned, 350
 Sitka, 353
 Western Golden-crowned, 349
- Lanidæ, 245
 Lanius, 245
 borealis, 246
 hedovicianus excubitorides, 249
 hedovicianus gambeli, 247
 Lanivireo solitarius cassini, 253
 Lark, California Horned, 99
 Dusky Horned, 99
 Hoyt's Horned, 98
 Island Horned, 99
 Pallid Horned, 99
 Prairie Horned, 98
 Streaked Horned, 99
 See Meadowlark
 Leucosticte tephrocotis tephrocotis, 157
 Linnet, 153
 Loxia curvirostra minor, 155
- Macrochires, 41
 Magpies and Jays, 100-114
 Magpie, Black-billed, 100
 Yellow-billed, 101
 Martin, Purple, 224
 Sand, see Bank Swallow
 Western, 226
 McAtee, W. L., cited, 18, 213, 215
 Meadowlark, 127
 Southern, 128
 Western, 129
 Melanerpes formicivorus bairdi, 26
 Melospiza, 191
 lincolni lincolni, 196
 melodia melodia, 193
 Merriam, Dr., cited, 16, 34, 271
 Micropodidæ, 44
 Miller, Olive Thorne, cited, 87, 101, 130, 289
 Mimidæ, 294
 Mimus polyglottos leucopterus, 296
- Mniotiltidæ, 257
 Mockingbirds, Thrashers, etc., 294-305
 Mockingbird, Western, 296
 Molothrus, 118
 ater ater, 118
 ater obscurus, 120
 Motacillidæ, 286
 Muir, John, cited, 289
 Muscivora forficata, 69
 Myadestes townsendi, 361
 Myiarchus cinerascens cinerascens, 77
 Myiochanes, 85
 richardsoni richardsoni, 86
 virens, 85
- Nannus hiemalis pacificus, 314
 Nighthawk, Pacific, 42
 Texas, 44
 Nucifraga columbiana, 112
 Nutcracker, Clarke's, 112
 Nuthatches, 320-327
 Nuthatch, Pigmy, 325
 Red-breasted, 324
 Slender-billed, 322
 White-breasted, 322
 Nuttall, cited, 84, 230, 378
 Nuttallornis borealis, 83
- Oporornis tolmiei, 273
 Oreoscoptes montanus, 294
 Oreospiza, chlorura, 210
 Oriole, Arizona Hooded, 132
 Bullock's, 135
 Orchard, 133, 135
 Oscines, 97
 Otocoris alpestris alpestris, 97
- Paridæ, 328
 Passerculus, 169
 beldingi, 170
 bryanti, 170
 rostratus rostratus, 170
 sandwichensis savanna, 169
 Passerella iliaca iliaca, 197
 Passeres, 69
 Passerina, 216
 amæna, 216
 ciris, 217
 Pearson, T. Gilbert, cited, 225
 Pendulinus, 132
 Penthestes, 330
 atracapillus atricapillus, 330

INDEX

- Penthestes* (*continued*)
atracapillus occidentalis, 333
gambeli gambeli, 334
rufescens, 335
Perisoreus obscurus obscurus,
 109
Petrochelidon lunifrons *luni-*
frons, 227
 Pewee, Wood, 85
 Western Wood, 86
Phainopepla nitens, 241
Phalænoptilus, 41
 nuttalli californicus, 42
 nuttalli nuttalli, 41
 Phoebe, Black, 80
 Say's, 79
Pica pica hudsonia, 100
 Picidae, 7
Picoides arcticus, 17
Pinicola, 147
 enucleator alascensis, 148
 enucleator californica, 148
 enucleator leucura, 147
Pipilo, 200
 crissalis crissalis, 205
 maculatus megalonyx, 200
 maculatus oregonus, 205
 Pipit, 286
Piranza ludoviciana, 220
Planesticus migratorius migra-
torius, 370
Plectrophenax nivalis nivalis,
 166
Polioptila, 353
 cærulea cærulea, 354
 cærulea obscura, 355
 californica, 359
 plumbea, 358
Poœcetes gramineus gramineus,
 167
 Poor-will, Dusky, 41
 Nuttall's, 41
 Progne, 224
 subis hesperia, 226
 subis subis, 224
Psaltroparus minimus minimus,
 336
Pyrocephalus rubinus mexican-
us, 96
 Raven, Western, 111
 Red-wing, Bicolored, 126
 Northwestern, 126
 San Diego, 126
 Red-wing, Sonora, 125
 Thick-billed, 126
 Tricolored, 127
Regulus, 347
 calendula calendula, 350
 calendula grinnelli, 353
 satrapa olivaceus, 349
 satrapa satrapa, 347
Riparia riparia, 233
 Road-runner, 1
 Roberts, T. S., cited, 121

Salpinctes obsoletus obsoletus,
 308
 Sapsuckers, 18-25
 Sapsucker, Northern Red-
 breasted, 24
 Red-breasted, 22
 Red-naped, 21
 Williamson's, 24
 Saunders, Mrs. E. J., cited, 137,
 359
 Sayornis, 79
 nigricans, 80
 sayus, 79
Selasphorus, 61
 alleni, 64
 platycercus, 61
 rufus, 62
 Sherman, Mrs. A. R., cited, 38
 Shrikes, 245-250
 Shrike, California, 247
 Island, 249
 Northern, 246
 White-rumped, 249
Sialia, 377
 currucoides, 382
 mexicana anabelæ, 381
 mexicana bairdi, 381
 mexicana occidentalis, 379
 sialis sialis, 377
 Siskin, Pine, 164
Sitta, 322
 canadensis, 324
 carolinensis aculeata, 322
 carolinensis carolinensis, 322
 pygmæa vig., 325
 Sittidæ, 320
 Snake-killer, *see* Road-runner
 Snowflake, 166
 Solitaire, Townsend's, 361
 Sparrows, Finches, etc., 142-218
 Sparrow, Bell, 186
 Black-chinned, 180

INDEX

- Sparrow, Brewer, 179
 Chipping, 177
 Clay-colored, 180
 Desert, 185
 Forbush, 197
 Fox, 197
 Gambel, 173
 Golden-crowned, 175
 Lark, 171
 Lincoln's, 196
 Nuttall's, 173
 Rock, 190
 Rufous-crowned, 188
 Savannah, 169
 Sage, 187
 Scott's, 190
 Song, 191-196
 Vesper, 167
 Western Fox, 198
 White-crowned, 172
 Sphyrapicus, 18
 ruber notkensis, 24
 ruber ruber, 22
 thyroideus, 24
 varius nuchalis
 Spinus pinus, 164
 Spizella, 177
 atrogularis, 180
 breweri, 179
 passerina passerina, 177
 Stelgidopteryx serripennis, 234
 Stellula calliope, 67
 Sturnella, 127
 magna magna, 127
 neglecta, 129
 Swallows, 223-235
 Swallow, Bank, 233
 Barn, 229
 Cliff, 227
 Northern (Violet-green), 231
 Rough-winged, 234
 Tree (White-bellied), 230
 Swarth, H. S., cited, 301
 Swifts, 44-50
 Swift, Black, 45
 Chimney, 46
 Vaux's, 47
 White-throated, 48
 Sylviidæ, 346

 Tachycinata thalassina thalassina, 231
 Tanager, Western, 220
 Tangaridæ, 219

 Telmatodytes palustris paludicola, 315
 Thistle Bird, *see* Goldfinch
 Thrashers, 294-305
 Thrasher, Bendire, 301
 California, 302
 Crissal, 305
 Curve-billed, 300
 Leconte's, 305
 Sage, 294
 Thrushes, Bluebirds, etc., 360-383
 Thrush, Dwarf Hermit, 368
 Hermit, 366
 Northern Varied, 376
 Russet-backed, 362
 Sierra Hermit, 369
 Varied, 374
 Thyomanes bewicki spilurus, 311
 Titlark, *see* Pipit
 Titmice, 328-341
 Titmouse, Black-capped, 330
 Gray, 330
 Plain, 328
 Torrey, Bradford, cited, 371
 Towhees, 200-211
 Towhee, Anthony's, 206
 California, 205
 Green-tailed, 210
 Oregon, 205
 Spurred (San Diego), 200
 Toxostoma, 300
 Bendire, 301
 crissale, 305
 curvirostre curvirostre, 300
 lecontei lecontei, 305
 redivivum, 302
 Trochilidæ, 51
 Troglodytidæ, 306
 Troglodytes, ædon parkmani, 312
 Turdidæ, 360
 Tyrannidæ, 69
 Tyrannus, 72
 verticalis, 72
 vociferans, 76

 Verdin (Gold-Tit), 340
 Vermivora, 259
 celata celata, 260
 celata lutescens, 261
 rubricapella gutturalis, 260
 rubricapella rubricapella, 259

INDEX

- Vireo, 254
 belli pusillus, 255
 huttoni huttoni, 254
 vicinior, 256
- Vireonidae, 251
- Vireos, 251-256
- Vireo, Anthony's, 255
 Cassin's, 253
 Gray, 256
 Hutton's, 254
 Least, 255
 Stephen's, 255
 Western Warbling, 252
- Vireosylva gilva swainsoni, 252
- Wagtails, 286
- Warblers, Wood, 257-285
- Warbler, Audubon's, 266
 Black-throated gray, 268
 Calaveras, 260
 California yellow, 263
 Dusky, 261
 Golden Pileolated, 284
 Hermit, 271
 Lutescent, 261
 Macgillivray (Tolmie), 273
 Myrtle (Yellow-rumped), 265
 Nashville, 259
 Orange-crowned, 260
 Pileolated, 284
 Townsend's, 270
 Wilson's, 282
- Water Ouzel, *see* Dipper
- Waxwing, Bohemian, 236
 Cedar, 237
- Wheelock, Irene G., cited, 78,
 326
- Willett, George, cited, 3, 94, 106,
 115, 119, 232, 381
- Wilson, cited, 85-6, 226, 228, 367,
 377
- Wilsonia, 282
 pusilla chryseola, 284
 pusilla pileolata, 283
 pusilla pusilla, 282
- Woodpeckers, 7-40
- Woodpecker, Arctic three-toed,
 17
 Cabanis, 10
 California, 26
 Gairdner, 11
 Lewis, 33
 Nuttall's, 14
 White-headed, 15
 Willow, 11
- Wrens, 306-316
- Wren, Bewick's, 311
 Cactus, 306
 Canyon, 309
 Rock, 308
 San Diego, 311
 Tule, 315
 Western House, 312
 Western Winter, 314
- Wren-Tit, 342
 Pallid, 343
- Xanthocephalus xanthocephalus,
 121
- Xenopicus albolarvatus, 15
- Yellow-throat, Florida, 277
 Maryland, 276
 Pacific, 277
 Western, 277
- Zamelodia melanocapala, 211
- Zonotrichia, 172
 albicollis, 175
 coronata, 175
 leucophrys leucophrys, 172

Myers, Harry

59.82

AUG - 2 1923

AUG 3

1923

F 1

APR 25 194

AMNH LIBRARY



100106710