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## THE COMMON NESTING BIRDS OF YOSEMITE VALLEY

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In certain respects the Yosemite valley is an ideal place in which to pursue the study of birds. Sheer cliffs rising 3000 feet completely wall in the upper end of the valley. The level valley floor, about a mile wide and six miles long, lying at the bottom of a great gash in the granite mountains is isolated to a degree which sets it apart from the surrounding country beyond the "rim." In other words, this deep pocket is a sort of great outdoor aviary where birds may find conditions suitable to various living requirements. The unique feature of the situation in the Yosemite, however, is the fact that a certain restricted area is actually enclosed by high granite walls, and this feature gives the bird student an opportunity to make an intelligent bird survey of an area restricted to quite definite bounds. Daily bird walks taken on the floor of the valley covering a period of 10 successive years have brought to the notice of the observer 146 different species of birds. Of the 146 species 60 species have been known to nest

in the valley. Of the 60 nesting birds 24 are regular summer visitants and 17 are resident birds, leaving 19 species to be accounted for as irregular and occasional nesting birds.

Besides the above-mentioned classes there are seven species that are to be considered as regular winter visitants. Now with 67 of the 146 species accounted for, there remain 78 to be placed under some sort of classification. It might be well to list the whole 78 under the title of "vagrant" species. However, there are at least two classes of vagrants; one class covering the species that are more or less regular and another class which covers the rare visitors such as "erratic wanderers," lost birds, or "accidentals" which may drift into the valley, perhaps, not more than once in the course of 10 years. Thirty species may be justly placed in this last-mentioned category.

In the following paragraphs the 24 summer visitants and the 17 resident species are to be considered.

### SUMMER VISITANTS

Chart showing first arrivals of the 24 summer visitants in Yosemite valley.

	1921	1922	1923	1924	1925	1926	1927	1928	1929
Spotted Sandpiper	5-12	5-12	5-7	4-30	5-1	5-2	4-30	4-24	4-30
Whitethroat Swift	3-24	3-24	3-17	4-16	4-6	2-25	3-1	2-20	4-12
Calliope Hummer	4-6	5-9	5-3	3-2	3-24	3-18	4-26	3-3	4-18
Wood Pewee	5-9	5-5	5-10	5-5	5-2	5-2	4-28	5-4	5-6
Trall Flycatcher	5-19	5-21	5-23	5-17	5-18	5-15	5-20	5-22	5-19
Redwing Blackbird	4-23	3-19	3-1	3-18	2-24	3-22	2-25	3-7	2-20
Brewer Blackbird		3-22	3-23	4-9	3-20	3-19	3-13	3-10	3-3
Evening Grosbeak	4-23	5-3	3-2	5-10	2-3	4-13	3-3	3-7	4-19
Whitethroat Sparrow		4-24	4-19	4-19	4-13		4-22	4-24	4-19
Chipping Sparrow	4-23	4-18	4-13	4-7	4-11	4-16	4-22	4-25	4-17
Lincoln Sparrow		5-28	4-11	4-12	6-2	4-10	5-20	4-30	5-18
Blackhead Grosbeak	4-23	4-24	4-20	4-18	4-26	4-15	4-21	4-23	4-17
Lazuli Bunting	5-30	6-1	5-7	4-18	5-13	5-2	5-20	5-24	5-18
Western Tanager	5-5	5-4	4-24	5-1	4-27	4-26	4-26	4-28	4-30
Violet-Green Swallow	4-8	3-18	4-12	4-2	3-26	3-22	3-7	3-16	4-11
Warbling Vireo	4-20	4-16	4-23	4-17	4-12	4-14	4-18	4-13	4-17
Cassin Vireo	4-21	4-13	4-19	4-14	4-12	4-14	4-22	4-17	4-17
Calaveras Warbler	4-22	4-28	4-26	4-18	4-20	4-16	4-18	4-21	4-24
Yellow Warbler	4-27	4-25	4-28	4-30	4-24	4-16	4-28	4-27	4-30
Blackthroated Gray Warbler	4-17	4-24	4-15	4-18	4-6	4-9	4-13	4-6	4-16
Hermite Warbler		4-22	4-25	4-25	4-25	4-20	4-24	4-22	4-21
Toimie Warbler	4-23	5-9	4-25	5-4	4-28	4-24	4-28	4-30	5-4

Chart Showing the Last Appearance of Summer Visitors in Yosemite Valley

	1921	1922	1923	1924	1925	1926	1927	1928
Spotted Sandpiper	9-16	9-2	8-23	8-30	9-5	8-2	9-12	9-17
Whitethroat Swift	8-30	8-28	8-22	9-19	8-19	10-10	9-16	9-7
Calliope Hummer	9-13	9-6	8-28	9-11	8-18	10-24	9-24	10-7
Wood Pewee	8-21	9-4	8-28	9-22	9-5	9-1	9-15	9-11
Trall Flycatcher	8-30	8-22	8-30	9-22	9-1	10-1	9-18	9-4
Redwing Blackbird	8-6	8-4	8-18	8-22	10-8	9-1	9-21	8-19
Brewer Blackbird	11-6	11-12	10-25	1-7	9-5	11-1	11-1	10-7
Evening Grosbeak	9-18	10-20	10-11	10-2	9-1	10-17	10-23	11-4
Whitethroat Sparrow	11-9	9-23	12-25	11-10	10-21	11-13	11-2	10-30
Chipping Sparrow		9-26	10-3	9-26	10-18	10-25	10-28	10-20
Lincoln Sparrow	10-28	10-29	10-28	9-2	10-25	10-24	10-28	10-17
Blackhead Grosbeak	8-30	9-1	8-30	8-30	9-1	8-30	8-27	9-16
Lazuli Bunting		8-16	7-30	7-25	8-22	8-5	8-19	7-25
Western Tanager	9-12	9-3	8-30	9-17	9-1	9-6	9-20	9-24
Violet Green Swallow	8-26	9-3	8-10	9-19	8-5	8-30	8-15	8-15
Warbling Vireo		8-25	8-30	9-21	8-18	8-20	9-12	9-22
Cassin Vireo		9-22	9-4	9-14	9-4	9-7	9-19	9-18
Calaveras Warbler		7-9	7-3	9-3	9-3	9-6	9-10	7-2
Yellow Warbler	9-11	9-3	8-30	9-9	9-5	10-1	9-1	9-10
Blackthroated Gray Warbler	8-25	8-25	8-13	9-6	6-30	10-1	9-17	10-6
Hermite Warbler	7-25	8-8	7-25	8-19	8-7	7-14	6-28	7-22
Toimie Warbler	8-29	9-4	8-29	9-21	9-3	9-6	9-15	9-17

**SPOTTED SANDPIPER** (*Actitis macularia*)—This is the small snipe-like bird that feeds on the gravel bars along the margin of the river. He may be easily recognized by his peculiar teetering stride, his clear whistled call-notes, and by his habit of flying low over the surface of the river. Often he makes a semi-circular flight out over the water to come back to the beach fifty or a hundred yards from his starting point.

The spotted sandpipers nest on the ground. The nest may be a mere depression in the gravel bar scantily lined with grasses and it is often situated in the shade of a weed or clump of beach grass. The eggs, usually four, are very large for the size of the bird. They are

buff and heavily blotched with lilac and rich brown. The young are precocious and like chicks are able to run about a few hours after breaking free from the shell. The young in case of danger depend for safety on their protective coloration and so marked are they that they can fairly melt into the stones of the gravel bar and disappear before one's very eyes.

The spotted sandpiper is the only representative of the sandpiper tribe to be found in Yosemite Valley. In the Yosemite this sandpiper never flocks as do the sandpipers along the ocean beaches, a family group of five or six birds being the greatest number ever seen together.

**WHITE-THROATED SWIFT** (*Aeronautes melanoleucus*)—The white-throated swifts are the feath-

ered meters of the upper air lanes. They are the birds that race across the heavens taking the insects

from the sky. Visitors to Yosemite Valley who notice swifts at all are likely to think of them as swallows, but really the only way in which they resemble swallows is in their feeding habits—both swallows and swifts take their food on the wing. The swifts have narrow, scimitar-shaped wings and a rapid, twinkling wing beat. The swallows have broad wings, a fluttering wing beat and a more leisurely manner of flight.

The white-throated swift is a dark bird with a white shirt front

and white rump patches. They are social, loquacious birds and their common chatter is a sort of a high-pitched titter, not unmusical.

The swifts nest in crannies high up on the granite walls and they take their baths on the wing in the mist of the mighty waterfalls.

The black swift is also found in Yosemite Valley. It is a larger bird and lacks the white markings. In flight the black swift is not so widely erratic and, too, it is a silent bird compared with the white-throated.

**CALLIOPE HUMMING BIRD** (*Stellula calliope*) — The calliope hummingbird is irregular in its migratory movements. Its arrival in the Yosemite valley is usually coincident with the blooming of the manzanitas, and as this bloom varies from season to season, the calliope's reporting time in the Yosemite may be anywhere between the first week in March and the first week in May.



The calliope hummingbird is America's smallest avian; a little green-backed fellow with a fiery throat patch that flashes gorgeous in the sunshine. Like most hummers, the calliope loves red flowers. Early in the season he is to

be found among the blooming manzanitas, or perhaps there may be a blooming wild gooseberry patch where red bell blossoms attract his attention. Later he is found in the red mimulus gardens, and still later the late blossoming wild fuchsias detain him in the valley.

To find a calliope hummingbird's nest required some knowledge of the hummers' habits and much patience, or a lot of luck. The calliope is likely to forage quite some distance from her nest, and when she hums homeward with food for the young she dodges through the forest lanes in a most elusive manner. The nest, a tiny little saucer, is likely to be placed high up on a pine bough and beautifully camouflaged on the outside with bits of bark from the same bough. About the only chance to find a nest is to follow the hummer home, and it is not easy to follow a hummer.

**WESTERN WOOD PEWEE** (*Myiarchus richardsoni richardsoni*)—The western wood pewee is one of the two flycatchers that nest commonly in the Yosemite valley. The other common nesting bird of this tribe is the Traill flycatcher. The pewee arrives in the valley during the first week in May—the Traill comes in about two weeks later. The only other flycatcher that are known to have nested in the Yosemite are the olive-sided and the western flycatchers.

The pewee is a bird about the size of a junco; the plumage above and on the sides is dark brown. The lower breast and belly is whitish, or perhaps yellowish-white. There are no conspicuous markings of any sort, no light eyering and no wing bars.

The male pewees arrive in the valley about a week ahead of the females. They stake a claim to certain territory and choose several perches from which they may hunt to good advantage. Bare twigs are almost always selected as the perching site, and these perching sites are often in trees bordering a meadow. The pewee perches from 10 to 40 feet above the ground. The nest is saddled on a horizontal limb and is most likely to be from 10 to 20 feet above the ground. The nest is composed of plant down, spider web and the inner papery cup of the dead cottonwood. The nest cup, usually placed on a dead limb, is firmly felted together and is so durable that it will last through a hard winter.

**TRAILL FLYCATCHER** (*Empidonax traillii traillii*)—The Traill flycatcher is slightly smaller than the wood pewee. In appearance the Traill is similar to the wood pewee, dark brown above and light below, but the Traill has a light ring around the eye which gives him a wide-eyed expression, and also there are two light wing bars to differentiate him from the pewee. Unless closely viewed, however, these differences are not apparent.

As a general rule the foraging lanes of the Traill flycatcher are much lower than those of the pewee. The Traill is a bird of the willow and azalea thickets along the streams, while the pewee is partial to taller trees, such as oaks and cottonwoods. The Traill often chooses a perching site that commands an unobstructed view of placid stretches

of the river. From such a perch he darts out over the water to snap in passing insects, nearly always returning to the same perch.

The Traill flycatcher takes his bath in the big river. He does this by swooping down and striking the surface of the water with his breast. This performance is repeated several times and then the bird takes to a perch to preen.

The Traill chooses a nest site in a dense thicket and the nest is seldom placed more than six feet above the ground. It is a bulky, well made affair of grasses and wood stems; the cup is smoothly lined with horsehair. The peculiar manner in which the branches of the azalea diverge from the main stem offers a crotch much to the liking of nest-building Traill flycatchers.

**RED-WINGED BLACKBIRD** (*Agelaius phoeniceus*)—The red-winged blackbird is a bird somewhat smaller than a robin and of more slender build. The males are entirely black except for a showy red patch at the bend of the wing. This shoulder patch or epaulet varies somewhat in color and in occasional birds it is more nearly orange than red. The lower margin of the epaulet is fringed with orange, and when the male redwing is on the ground with wings folded the shoulder patch is partly concealed; then there appears but a narrow band in double color, orange and red. The female is smaller than the male and her sooty

black garb is streaked with gray.

Most everyone knows the red-winged blackbird. They are showy birds and besides they voice their presence in no uncertain terms. Their song is simple, but musical. A sort of silvery bray uttered in a most cheerful tone of voice. Also they announce their presence in a clear, whistled call note. Here in the Yosemite valley the redwings nest down among the reeds and marsh grasses. The nest is bulky, but compact and is in a tussock but a few inches above the water of the swamp. The nesting redwings in the valley number possibly 20 pairs.

**BREWER BLACKBIRD** (*Euphagus cyanocephalus*)—The Brewer blackbird is slightly smaller than a robin and of a more slender build. The male is entirely black—blue-black with a rich sheen to his plumage. His one contrasting mark is a whitish eye. The female is much smaller than the male, she lacks the "white" eye and her plumage is dull black and without the sheen.

Next to the redwing the Brewer is the first summer visitor to arrive in the valley, and like the redwing he is a bird of the open meadows. While the feeding habits of these two blackbirds are similar, their nesting habits are quite different. The redwing nests on the ground, the Brewer nests in the mistletoe branches high up in the oaks.

The Brewer blackbirds are at all times more or less gregarious, and if nesting sites are available, 10 or a dozen pairs will nest in a single tree.

The Brewer blackbird is the only species of bird that has shown in the Yosemite valley a noticeable increase in numbers over a period of 10 years. Nesting in trees, they have an advantage over the redwings, for they are less liable to be caught in the crude oil that is poured into the marsh lands to kill the mosquitoes. It is really too bad that some chemical less harmful to birds is not employed in the place of the obnoxious crude oil that claims so many feathered victims.

**CALIFORNIA EVENING GROSBEEK** (*Hesperiphona vespertina californica*)—In size the evening grosbeak is the largest representative of the sparrow tribe found in Yosemite valley. He appears almost as large as a robin; a plump and handsome fellow with a very large cone-shaped bill. His body is brownish yellow, his wings and tail are black and on each black wing there is a large white patch. In flight these white patches form conspicuous marks by which the male bird can be recognized for quite some distance. The top of the head is black, the forehead and a stripe over each eye is clear lemon yellow. The large, olive-green, almost parrotlike bill gives the evening grosbeak a striking appearance when seen close at hand.

The voice of the evening grosbeak is a whistled squeal; at times a single note, at other times three squealing notes are slurred together. These notes have a far-carrying quality and when once they are learned they are not likely to be confused with the notes of any other bird of the district. In tone quality these notes might remind one of the begging notes of the young black-headed grosbeak. If these squeally notes slurred together constitute the song of the evening grosbeak, then these birds sing every month that they are present in the valley. And if these squeally notes are not to be so considered as the song, then the bird never, or at least very rarely,

sings. We have never heard any musical song.

In the Yosemite valley the evening grosbeaks habitually nest high—a good 40 feet or more above the ground. The female does all of the work of nest building, but in all her foragings for new material she is closely escorted by her mate. He lends his moral support, as it were, and if permitted no doubt acts in an advisory capacity. The yellow pine is the favorite nesting tree. The nest is usually placed on a horizontal branch, well out from the main trunk, where the needle tufts begin to appear and where diverging branches offer a supporting platform. The nest site and the general appearance of the nest from below might easily confuse one, for the western tanager builds just such a nest in just such a situation. The birds of the pair share the labor of feeding the young, and their unique behavior in this activity sets the evening grosbeaks apart from all other birds of the district. Instead of each bird going its separate way in search of food, the grosbeaks hunt as a pair. Always in company they leave the nest, always in company they return.

During the spring months the evening grosbeaks divide their time between the treetops, where they feed on nuts, and the ground under the pines, where they glean the fallen pine nuts. During the fall months they feed on wild berries, and they are especially fond of the fruit of *rhamus californicus*.

#### **WHITE-CROWNED SPARROW** (*Zonotrichia leucophrys*)

The white-crowned sparrow is the sparrow with the white and black crown stripings. The white stripes are pure white and the black stripes glossy black. The central crown stripe is white, bordered by black stripes then two white stripes and two black stripes finish off the crown markings. The black is gray streaked with brown, brownest toward the rump and the tail is brown. The under surface is grayish white and is unmarked by streaks of any sort. The male and female are marked alike, but immature birds have brown and gray crown stripes in place of black and white. In size they are close to the English Sparrow. No other sparrow of the district has such a conspicuously marked crown. The

song of the White crown is short, but pleasing and the theme seldom varies. The call note is a short "cheep."

As nesting birds the white-crowns are rare in Yosemite Valley. The fact is that not more than one pair has been found nesting in any one season. A few birds, however, may be expected to pass through the valley each spring, and the birds that do pass through the valley are consistent in their movements, nearly always making their first appearance during the third week of April. During the spring of 1926, however, not a single bird was seen. During the fall months the Yosemite is blessed with another visitation of whitescrowns. These fall birds belong to a different geographical race; they are Gamble whitescrowns and not the Hudson-

lar whitecrowns of early spring.

The two white-crowned sparrows that appear in Yosemite valley, the Hudsonian and the Gamble, are very similar in appearance, the only noticeable difference being a slightly different arrangement of the crown strips. In the Gamble white-crown the white stripe over the eye extends down to the bill, while in the Hudsonian white-crown this stripe does not extend below the eye.

Observations in the Yosemite

### WESTERN CHIPPING SPARROW

(*Spizella passerina arizonae*)

The chipping sparrow is the smallest representative of the sparrow tribe found in Yosemite Valley. He is a slender little bird with a



Western  
Chipping Sparrow -

gray-streaked back and a soft gray-white under body. He has a brick red crown patch which is bordered on either side by a white stripe which extends over the eyes. Male and female are marked alike.

The chipping sparrow feeds on the ground and his favorite nesting

valley would seem to indicate that the whitecrowns preferably nest on the ground. They build in the manner of a junco. The nests are well concealed under a cover of dry grass, or perhaps, a dry fern frond may offer the desired protection. The whitecrowns are most cautious in approaching the nest, but should the nest be discovered they become quite bold and vociferous, doing their best to inveigle the intruder away.

site is at the outer end of a pine bough where the needles cluster thickly to hide the nest from below. The nests are placed anywhere from one to twenty feet above the ground. The general construction of the nest is rather loose but the cup is well formed and is always beautifully lined with horsehair.

The song of the chipping sparrow is a rapid metallic trill, an insect-like buzz. On account of his peculiar song he is sometimes referred to as "the little alarm clock." His call-note is a feeble "chip."

The chipping sparrow is rather common and is found in all sections of the valley. He prefers, however, an open wood, or the fringe of a wood that borders a meadow.

Chipping sparrows are ardent lovers and mated birds do more honeymooning than most kinds of birds. Or, perhaps, they are merely less secretive in their honeymoon affairs.

### LINCOLN SPARROW

(*Melospiza lincolni*)

The Lincoln sparrow is a gray brown little bird, very much streaked above and below. In size and appearance he resembles closely the common song sparrow, the only apparent difference being the markings of the breast. The Lincoln, like the song sparrow, has the black dot in the center of the breast, but in place of the bold pencilings on the breast there is a veil of very fine streaks.

The song of the Lincoln is a rich bubbling melody reminiscent of the song of the song sparrow, the call-note, however, is a weak squeak absolutely different from the plaintive note of the true song sparrow.

The Lincoln sparrow is a rare bird in Yosemite Valley, that is to say through a period of ten years only two nesting pairs per season have been noted. The Lincolns are reclusive birds, they live along willow-screened ditches and they hide their nests well and were it not for their gay songs they might be easily overlooked. The Lincolns nest on the ground, and where grasses overhang the slope of a ditch is offered a site suitable to their nesting needs. In such a situation they can follow along the ditch and approach the nest without being seen from above. The two nesting pairs of the valley come back to the same location year after year.

### PACIFIC BLACK-HEADED GROSBEAK

(*Zamelodia melanocephala capitalls*)  
In the Yosemite Valley the black-

headed grosbeak is one of the most common nesting birds. The male in full plumage is among the most handsome, and as a singer he ranks with the very best. If practice makes perfect, perhaps that is the reason the blackheaded grosbeak is such a grand songster, for he sings all day long during the spring months.

The black-headed grosbeak is smaller than a robin, but large for a sparrow. The male is gaily dressed. He has an orange collar and a glossy black head. His back is mostly black, but it is flecked



Black-headed Grosbeak

with white markings and there are white markings at the end of the black tail. His under body is mostly orange, but there is some clear yellow on the lower bellie and at the shoulder under the wing. These soft yellow feathers under the wing he flares out like a plume when ardently courting his mate. The female blackhead is not so gaily garbed. There are three gray stripes over the crown, the back is gray, streaked with brown, and the under parts are a sort of brown gray. The immature birds are marked similar to the females. Both

male and female have heavy, cone-shaped bills.

The black-headed grosbeaks seldom nest so high as 20 feet above the ground, occasionally they nest as low as two feet above the ground, but eight feet is near the average height. Although nests of the black-headed grosbeak have been found in every sort of shrub that grows in the valley their nests are most likely to be found in incense cedar or wild coffee bush. The female builds the nest, which is a rather flimsy affair, so loosely knit, in fact, that the eggs may in some cases be seen from below. The male takes his turn incubating the eggs, and he has a habit of singing on the nest while incubating. To the knowing one, this habit is often the means of disclosing the nest. While the young remain in the nest, both parent birds bring in food, but when the young leave the nest the male parent takes full charge of them. The young grosbeaks have insatiable appetites and all day long they follow their daddy about, begging for food in a whining, cat-like voice. Day after day he feeds them, and stuffing food into their gullets he wears the feathers from the base of his bill, the result of which is a bald-faced appearance.

The song of the grosbeak is a glorious swirl of full-rounded melodious notes. There are upward and downward inflections, and bursts of bubbling trills. And in moments of ecstasy there is the wild, free flight song that goes swinging upward with the bird to come down with soft fluttering warbles as the bird settles. The call-note of both male and female is a sharp "white."

### LAZULI BUNTING (*Passerina amoena*)

The lazuli bunting is one of the most exquisitely beautiful summer visitants to the Yosemite Valley. This thrilling bird, this dainty darling, comes late to the valley and leaves early. Some time after the middle of May he makes his appearance and before the end of August he has departed; his stay in the valley is all too brief. And while the lazuli is more or less common in the foothill district of the Sierra he is rare enough in the Yosemite Valley to give a thrill on every meeting. Six nesting pairs of

lazuli buntings in the Yosemite Valley is perhaps above the seasonal average.

The lazuli bunting is a member of the sparrow tribe, but he is no ordinary sparrow; not he, for he is the blue dandy. And the blue of his garb is no ordinary blue, but lapis lazuli, the blue of the sky. This sparkling, dazzling sky blue color spreads over head, throat, and rump. His tail is dark and across his dark wings is a white bar. Dark wings and tail, white wing-bars, a touch of rosy buff across the chest, and blue, blue, blue. What a heavenly jewel he is! The female and



the young have not even a splash of sparkling color. They are dull brown above, white and buffy below.

The lazuli bunting is a small bird, quite obviously smaller than an English sparrow.

The nest of the lazuli is a rather large affair for such a small bird. It is loosely, but neatly, woven of dry grasses and weed stems. The inner walls are composed of fine grass stems and the cup is lined loosely with horse-hair. The eggs, usually four, are of pale blue cast. To find the nest of a lazuli is a task to test the skill of the bird student. The nests are usually placed in a brush tangle under a dense cover of foliage and the nesting female is a very cautious bird. She comes to her nest or slips away in a secretive manner. Many birds that nest low to the ground are cautious when approaching the

nest, but there are few kinds of birds that will leave the nest so soon on the approach of a suspected enemy. It is almost impossible to steal up on a lazuli and catch her on the nest.

No one would expect such a dandy as the male lazuli to do much work, and from observations in the Yosemite he does very little of the unexpected. The female does all the work of nest building, also she alone incubates the eggs. While the female attends to these family duties the male from his high perch lends his moral support in song. He is a persistent singer and when in the mood his song is repeated on the average of six times to the minute. When the young come along the male will occasionally condescend to bring in a fat worm, but this is perhaps a mere gesture of fatherly interest.

### THE CASSIN AND WARBLING VIREOS

Among the birds that come to Yosemite valley as summer visitors are two species of vireos. The vireos are small birds, smaller than a junco, gray green above and whitish below, with no conspicuous markings of any sort. The cassin has a ring around the eye which gives him a wide-eyed expression. The warbling vireo lacks the white eye-ring, but has a gray white line over the eye. The warbling vireo sings a pretty warbling lay which seems to roll around in a circle in syncopated time. The theme sel-

say 'Jimmie—Come here.' Besides the songs, both vireos have a series of scolding, chatter notes, given in a scratchy raucous voice. These scolding notes are most likely to be heard when the vireos are mobbing some jay who has wandered too close to their home tree.

The vireos arrive in Yosemite valley about the middle of April. Over a number of years the average date of arrival is April 16 for the cassin vireo and April 17 for the warbling vireo. The birds are singing when they arrive and so they are not likely to be overlooked by the observer who looks forward to their coming. The vireos are not common after the middle of July and before the end of September the last bird has gone. The latest date for the cassin is September 19, and the latest for the warbling is September 21.

The vireos are insect feeding birds that do most of their foraging among the leaf sprays of broad-leaved trees, and in the Yosemite valley they are especially partial to the oaks, both Kellogg and chrysolepis.

The vireos are not wonderful singers, neither are they strikingly garbed, but as artists of another sort they rank with the most famous. Nest building is their forte. In general the architectural design of the nest varies but little. The



dom varies and as the birds are among the most persistent singers, they play a prominent part in the avian chorus of spring. The song of the cassin vireo is simple, but unique. It consists of four notes given with a rising and falling inflection. Or, perhaps a better description will be two double notes with a pause between. The rising and falling inflections give the song a sort of question and answer effect. To impress the character of the song on his students, Dr. Bryant says, "The cassin seems to

method of construction, the situation and the form are so consistently followed by both vireos that the finished product may be instantly recognized as the work of a vireo. In the matter of outside decoration, there is also a "vireo way" of doing things; a way which sets the vireo nest apart from all other nests of the district. Also in nest building the vireos show a decided preference for certain kinds of trees, as the following chart will indicate.

Chart to indicate choice of nest-site of cassin and warbling vireos. Height above-ground and kind of tree:

#### Cassin Vireo

Thirty-five nests	Kind of tree
Highest 25 feet	Kellogg oak 22
Lowest 4 feet	Chrysolepis 6
Average 10 feet	Choke cherry 3
	Cottonwood 6
	Incense cedar 1
	Laurel 1

#### Warbling Vireo

Twenty-two nests	Kind of tree
Highest 40 feet	Kellogg oak 10
Lowest 7 feet	Cottonwood 9
Average 27 feet	Apple tree 3

One might expect the cottonwood tree to be the choice of the vireos because the white appearing nests blend so nicely with the white of the underside of the cottonwood leaves. However, the aim of these birds apparently is to conceal their nests from above as in almost every case they are swung under a protecting canopy of leaves. A few brown leaves in this canopy seems to please them. Seemingly they are not concerned with the chance enemy who might look up from the ground for, as a matter of fact, these white nests are very often conspicuous from below.

In the matter of selecting a nest-site the vireos show a fine discrimination. A fork of a horizontal branch well out toward the end where the branchlets are about the thickness of a lead pencil is the usual situation. A canopy of leaves to shade the nest from above is desirable and in this canopy a few dry leaves often seem to add the appealing touch that influence the vireo in the selection of the home site. After the nest-site has been chosen the birds search the wood for spider web, the first material to be used in construction.

The female does most of the work; the male bird acts as escort and cheerfully lends his vocal sup-

port to his hard working mate. Occasionally he may consent to bring in a bit of material, but most of his work during construction is in an advisory capacity. In preparation for the actual work of nest building so much of the forked twigs as is to be used to support the nest is carefully bound round with spider web. This done, a cable is stretched across the open space of the fork to complete the circle from which the nest is to be hung. The material used in the supporting cable is cotton string, paper, plant fiber or some other substance of textile strength. The cable is thoroughly wound with spider web to give added strength and then the frame is ready to support the swinging basket nest.

Now the vireos bring in stringy material, plant fiber, spider web, grass blades and bits of string. This material is draped over the frame and the loose ends hang down in a network like the open net from a basketball hoop. When the network is sufficiently dense the loose ends are gathered together at the bottom and fastened in the form of a basket-like net. To this network material is added until when finished the felted cradle would almost hold water. Then when the nest is lined with horse-hair, fine rootlets or perhaps some other material of a like nature, it is ready to receive the eggs.

The outside of the nest is decorated with bits of lichen, bits of paper, white flower petals and empty spider egg cases. This last item is the most important in the eyes of the vireos. Both the Cassin and the warbling vireos use these white, paper-like egg cases to a great extent in exterior decoration. Much of the exterior decoration is added after the nest is in use. The Cassin hangs these egg cases loosely to the nest; the warbling weaves them into the mesh of the net, and as a result the nest of the warbling vireo has a much smoother finish. It is the spider egg cases that give the nest its whiteness and make it so conspicuous from below. The spider egg case decorative scheme is the badge of the house of vireo.

When the time arrives to begin incubating the eggs both the male and female vireos are eager for the task; they compromise by taking turns on the nest. The bird that

happens to be occupying the nest always appears reluctant to leave and the bird awaiting a turn must do some coaxing. When the bird on the nest consents to give up her turn on the eggs she evidently indicates her willingness in some manner for the exchange of places is made in the flash of an eye. Seemingly in one movement one bird slips off from the nest and another on.

When the young birds arrive there is no longer competition for the care of the nest, for with a nest

full of hungry birds to feed both parents are kept busy.

Evidence would seem to indicate that normally vireos only rear one brood of young a season. The late nesting birds are probably birds that met with a misadventure in their first attempt. At the close of the nesting season the vireos cease to sing, the family groups scatter and although stray birds are frequently seen the vireos no longer have a prominent part in the landscape.

### WESTERN TANAGER

(*Piranga ludoviciana*)

The Western tanager is generally considered as the most beautiful bird found in the Yosemite Valley, and there is reason why he should be so considered for he is, indeed, a handsome bird. The male tanager has a brilliant red head, a golden body, black wings and tail. When he first arrives in spring he is immaculate, with each feather lying perfectly in place. The female has a lemon green body, darker above than below. These tanagers are noticeably smaller than a robin,



Western Tanager

but much larger than any of the warblers.

Tanagers are found in all sections of the valley. About the public camps they become quite tame and often they will drop out of the pines to share food with the friendly camper. They are passionately fond of butter and it is not unusual for a bold individual to come onto a table where people are eating to take a dab of his favorite dessert. Such a show of confidence on the part of the gaily garbed tanager

makes a lasting impression on most any camper so honored.

The tanagers are poor nest builders. The nests are placed at an average height of 35 feet above the ground, usually in conifers. The nest is loosely knit of twigs, rootlets and dry grasses, and it is seldom securely bound to the branch on which it rests. The female does all the work of nest building and incubating, but when the young come to the nest the male does his full share in keeping their appetites satisfied.

The songs of the robin, the black-headed grosbeak and the Western tanager are confusing to the untrained ear. Of these three the grosbeak is by far the most finished artist. In moments of exaltation the grosbeak, at least some individuals, are not surpassed in song by any bird of the West. And always the grosbeak's song has a cheerful, carefree swing. In mournful, deliberate notes the robin chants a dirge. The tanager's song is more of a war chant. The theme is rather set, but is carried with a martial air like the beating of war drums for the march. The br-up, br-up, br-up of his call-note is carried through the theme and one who knows this call-note can distinguish the tanager's song from the song of either robin or grosbeak.

The Western tanager is not usually classed as a fine singer, but surely his song is as arresting as a robin's.

### NORTHERN VIOLET-

GREEN SWALLOW

(*Tachycineta thalassina lepida*)

The violet-green swallow is really a small bird, less in bodily bulk

than the Sierra junco, but in flight he appears larger because of his long and pointed wings. When perched on a telephone wire, which, by the way, is his favorite

perch, his wings are seen to extend well beyond his tail. In general appearance the violet-green is distinctly a bird of two colors. The under surface of his body is pure white—a pure silky white with a sheen like the floss of a milkweed pod. The upper surface of the body is a glorified green, with glints of violet flashing in certain lights. On the wing this swallow appears to have a white collar and a white band over the rump. Sweetly plaintive notes uttered in twittering conversation appraise one of swallows on the wing. No bird in the summer skies is more exquisitely garbed than the violet-green swallow. No bird in the summer skies better exemplifies the poetry of motion.

The violet green swallow is one of the rarer nesting birds of Yosemite Valley. It would be safe to say that there were never more than



White-throated Swift



Violet-green Swallow

four nesting pairs in the valley during any one season, and there were seasons during the last ten years when not a nesting pair was noted. In the valley the few birds that have nested, have always selected old woodpecker holes as the nesting site.

Apparently the violet-green swallows are social in their inclinations for whenever possible they nest in close proximity to one another. One season there nested in a certain dead cottonwood in the Leidig meadows two pairs of violet-green swallows and a pair of sparrow hawks. The hawks had the upper apartment, the deserted nest-hole of a pair of red-shafted flickers. The swallows were lower down, in the deserted nest-holes of the hairy woodpeckers. Farther down the valley, for several seasons an old pine stump furnished nesting sites for three pairs of violet-green swallows. And this same stump, by the way, harbored the only nesting

violet-greens during these several seasons. One year a pair of white-headed woodpeckers drilled a nest-hole and successfully reared a family in this same "swallow tree." Swallows and woodpeckers get along without the least argument.

One morning we happened to be in the Leidig meadow when a pair of violet-green swallows were lining their nest. The male bird came with a feather in his bill and disappeared into the nest-hole. He reappeared in a moment and flew off over the meadow. No sooner had he gone than the female appeared with a feather in her bill and dived into the nest-hole. When she left the nest she circled and zig-zagged across the meadow. We could follow her with our eyes. She soon turned, and back she came with another feather. Further observations verified the fact that the swallows were actually taking the feathers on the wing, but from where came the feathers that the swallows were plucking from the air we did not learn. While but a few pairs of violet-greens actually nest on the floor of Yosemite Valley there are occasionally seen bands of from 10 to 20 birds skimming low over the meadows. These low-flying swallows are usually seen after a thunder shower has swept the upper atmosphere free from winged insects. At other times a mixed flock of white-throated swifts and violet-green swallows are to be seen circling close to the summit of a tall pine feeding on insects that pour forth in a migratory flight. Under such circumstances the differences between swift and swallow becomes at once apparent. The swift's long pointed wings are narrow from tip to base and in outline against the sky the wings form a perfect scimitar. In other words, looking up from below, the silhouette of the swift takes the form of a cross-bow. And, too, the swift flies with the speed of a bullet, leaping and diving through unbelievable evolutions. As the swift twists and turns, his twinkling wings beat alternately, thus enhancing the effect of his wild, bewildering flight.

The pointed wings of the swallow are broad at the base, the wing curve is not perfect, the outline against the sky is quite different. Compared to the swift, the flight of the swallow is leisurely. It is a graceful, buoyant flight with moments of leisurely sailing.

### CALAVERAS WARBLER (*Vermivora Ruficapilla Gutturalis*)

In general coloration the Calaveras warbler is yellow—clear yellow below, greenish yellow above. A blue gray cap extends over the crown and down the back of the neck. The throat is clear yellow and there are no markings whatever of either black or white. The female is similar to the male, but the colors are somewhat modified. Like all the common warblers of the Yosemite the Calaveras warblers are small birds, trimly built and actively alert in their feeding habits. And from their general feeding habits it is safe to assume that they feed almost entirely on insect life.

During the spring and summer months six different species of warblers are to be found commonly

in the Yosemite Valley. Each of the different species has different foraging areas and different tastes in vegetational associations. The Calaveras warblers show a decided preference for the maples and Kellogg oaks. They do not, however, follow the oaks out onto the level valley floor, but stick to the forest covered talus slopes at the base of the walls. When they first arrive in spring they spend their days among the freshly leafing oaks on the warm north side of the valley. Later in the season when the sun climbs higher and the days grow warm many of these birds move across the valley into the shadow of the great south wall to take up their stations for the nesting season among their beloved maples.



WARBLERS OF YOSEMITE

### California Yellow Warbler (*Dendroica Aestiva Brewsteri*)

In the Yosemite Valley the California yellow warbler is the most common nesting warbler. He is a trim bird and small, half the size of a canary, greenish yellow above, clear yellow beneath, with fine reddish streaks on the breast which can only be discerned at close range. As he flits about in the willows it will be seen that he well deserves his common name, "summer yellow bird." In markings the female and the young are similar. They have less of the golden brilliance of the males and the reddish streakings on the breast are lacking.

The yellow warblers are to be looked for in the willows and in the azalea thickets along the streams. As a rule, they forage in low bushes and in willows, but occasionally they climb high in the cottonwoods. While the willows present the favorite hunting grounds, the azaleas offer the choice nesting sites. The azaleas branch in such manner as to present an ideal crotch in which to place a nest. Often five branches diverge at the same point, like fingers from a cupped hand. A nest set down in

such a cup and lashed to the five stems is certainly secure against any ordinary wind. A dense canopy of leaves overhead offers shade, concealment and a limited amount of shelter from rain.

The yellow warblers are wonderful nest builders. The frame of the nest is formed of fibers and grasses and in the process of construction the frame is securely bound to the supporting branches. Silk fibers from the dry stems of the apocynum are sometimes used to bind the frame together and in such a case the nest is very beautiful, with a lustrous, silvery sheen. This beautiful cup is lined with down from willow catkins and by whirling in the nest as they line it, the birds smooth the cotton into a perfect felt. Actually, the nest is so well made and so well felted that it will hold water like a tin cup.

As a rule, the yellow warblers are easily frightened from their nests. They do not sit close, as do some other kinds of small birds—hummingbirds and vireos, for instance. When the nest of a yellow warbler is approached, the brooding bird will slip quietly through the bushes to bob up some distance

away, where it will utter shrill cheeps of protest while the intruder remains in the vicinity of the nest.

The song of the yellow warbler is a series of exceedingly high-pitched, shrill notes. These song notes are uttered with great rapidity, as though the bird was in a hurry to get the song out. Of all

our warblers, the yellow is the most persistent singer. After the nesting season the other warblers become silent, but not so the yellow warbler. He is singing when he arrives, he sings through the mating season, and he is singing when he departs.

#### **Black-Throated Gray Warbler** (*Denroica nigrescens*)

The black-throated gray warbler is among the first summer visitants to arrive in Yosemite Valley. This warbler is distinctly a black and white bird and it is set apart from all other common warblers of Yosemite in having no conspicuous yellow markings in its color scheme. Its head, neck and throat are mostly black, but there is a clear-cut white line over the eye and another from the bill running down the side of the throat. The upper surface is a dark bluish gray. The under surface is white, except for beautiful pencilings along the side of the breast. The margined tail flashes white when the bird is in flight. The females and the young birds are similarly marked but the white and black markings are not so clear-cut.

In the Yosemite Valley the black-throated gray warbler has its own particular habitat. It is a bird of the *Chrysolepis* oaks and is to be found on the oak-covered talus slopes on both sides of the valley. In its particular habitat it has little or no competition in its search for insect food. The only other warbler likely to be found in the neighborhood of the blackthroat is the Calaveras, and this warbler confines most of its foraging to other broad-leaved trees that happen to mingle with the golden-cupped oaks.

#### **Tolmie Warbler** (*Oporornis tolmiei*)

Like the other nesting warblers of the Yosemite Valley, the Tolmie warbler is a small bird—a bird somewhat smaller than a junco. The tolmie wears a blue gray cowl which comes neatly down over the breast and shoulders in the fashion of the black cowl worn by the Sierra junco. The upper surface, back, wings and tail is a sort of dull olive green. The belly is clear yellow. White eyelids may be

The only nest of the black-throated gray warbler to come under my observation was placed in a ceanothus bush about five feet above ground. At the time of discovery it was full of young birds. The mother bird was very much concerned with my presence and to relieve her anxiety I retired without giving the nest much study. I did observe, however, that it was a neat, cup-shaped affair constructed of dry plant fibers and lined with feathers.

In the fall of the year, with their family cares over, the black-throats may leave the shelter and protection of the *Chrysolepis* oaks and wander out onto the level valley floor in search of adventure. At this time of year they may be seen in the Kellogg oaks, or even in the willows that margin the stream. On their rambles out into the valley they are likely to fall in with other kinds of warblers or, perhaps, they may join company with a band of wandering Chickadees. On October 1, 1926, we came upon just such a band of straggling summer birds. Included in this company were two black-throated gray warblers, three yellow warblers, a house wren, and a yellowthroat. This was a late record for all three of the warblers and no doubt they were the last few stragglers of the warbler tribe on their way out of the Yosemite, bound for their winter home.

clearly seen when the bird is close to hand.

In the Yosemite valley the tolmie warbler is most likely to be found in the cool woods where an undergrowth of eagle ferns and *azeleas* offer favorable cover and feeding grounds. The forage lanes of the tolmie lead through the low growing bushes, and therefore these birds are seldom found foraging at elevations greater than ten feet above the ground. The male birds do, however, go higher to sing.

About the homesite the male selects two or three favored singing perches where before the young come along he may be found singing day after day. The song consists of a series of three, or four, of five clear notes distinctly spaced but running along on an even pitch to be followed usually by three rapidly-uttered single notes with which the song ends abruptly.

As will be noted by the chart, the tolmie is the last of the nest warblers to arrive in the valley. The males arrive first, and year after year they may be found at the certain tolmie haunts at scattered points about the valley. A week or ten days after the males arrive, the females put in their appearance at the appointed place.

Tolmie warblers occasionally nest on the ground in the manner of the junco, usually, though, the nest is placed at an elevation of from ten

to twenty inches above the ground. Here in the valley it has been noted that the tolmie warbler shows a preference for thorny bushes in selecting a nest site, and as a consequence the wild gooseberry is a favored shrub. The normal complement of eggs is apparently four, but occasional nests are found with but two or three eggs. The eggs are creamy white, splotted with brown around the large end. Nests are built of bark fibers, grasses, soft weed stems, and they usually contain a lining of horsehair.

Tolmies are not particularly numerous in Yosemite valley, but owing to their habit of returning year after year to certain localities, they are always to be found during the summer months by those who know their habits. Oddly enough the number of nesting pairs in the valley remain almost constant through the years.

#### THE RUSSET-BACKED THRUSH AND THE HERMIT THRUSH

There are two species of thrushes that in former years were more or less common nesting birds in the Yosemite valley. The russet-backed thrush (*Hylocichia ustulata ustulata*) was the more common of the



two, but there were always a few nesting pairs of Sierra hermit thrushes to be found in the cool woods along the base of the south wall of the valley. During the last three seasons both of these thrushes have been rare on the floor of the valley and apparently they are be-

coming more rare. During the spring of 1929 there were scattered pairs of russetbacks present, but not a single nesting pair of hermit thrushes came to our notice.

The russet-backed thrush appears to be about half the size of the robin. It is built along the general lines of the robin, but is more slender, more graceful, and with longer legs in proportion to its body. The russetback is a brown bird with a light buffy breast which is marked by scattered triangular spots of dark brown. The eye is circled by a narrow ring which gives the bird an innocent, wide-eyed expression. The hermit thrush is somewhat smaller than the russetback and seemingly of a plumper build. The general markings are similar, except that the hermit thrush has a redder tail, and this reddish tail contrasts with the olive brown of the back. The russetback's tail is also reddish but it blends into the color of the back rather than contrasts.

While the russet-backed and the hermit thrushes are similar in appearance there are, fortunately, other features which help to differentiate one from the other. One of the best field marks by which to separate these birds is the twitching habit peculiar to the hermit thrush. Every few seconds the perched hermit thrush will convulsively twitch its wings and opti:

its tail. The russetback will flock its wings in the manner of a robin when it first alights on a perch, but this movement appears to be deliberate rather than spasmodic and it is not reiterated in the manner of the hermit. Also the songs of these two thrushes are distinctly different. The voice quality is similar, also the theme has points in common, but the rendition is entirely different. The russetback's song starts low and spirals upward through a swirl of continuous notes. The hermit's song makes a similar upward swirl but the climb from low to high notes is made in three flights. In other words, in the hermit's song the continuity of the upward swirl of notes is broken by two distinct pauses; pauses that represent silent notes for the song leaps into a higher swirl after each pause.

Both thrushes place their nests in low bushes and in the Yosemite the azalea and the syringa are favored shrubs. The nests are well built and rather bulky for the size of the birds. Dry fern fronds, oak leaves and oak tassels decorate the out-

side of the nest, and the thrushes, like the robin, use a mud casing. Fine rootlets, pine needles and bark fiber is used for a lining. Often a ribbon of paper or cloth is hung to the outside of the nest.

As compared to other summer visitants to the Yosemite valley, the thrushes are among the last to appear on the summer nesting grounds. The following chart shows first arrivals in the valley over a period of nine years:

Russetback thrush—5-12, 5-7, 5-9, 5-15, 5-6, 5-16, 5-13, 6-1, 5-12.

Hermit thrush—5-2, 5-1, 5-2, 5-2, 5-2, 5-1, 5-11, 6-9, 5-26.

These nesting thrushes leave the valley somewhere toward the end of August. No accurate record can be given of last appearance of these nesting thrushes in the valley for the situation becomes obscure and complicated by the arrival in the fall of more northern nesting-birds that pass through the valley on their way south for the winter. For example, the Alaska hermit thrush is likely to be seen any time during the winter months.

## PERMANENT RESIDENTS

**GOLDEN EAGLE** (*Aquila chrysaetos*). Eagles are not common birds in the Yosemite district. There are never more than one or two pairs about the valley. They are seen most often during the winter months when they come to the floor of the valley in search of food. A pair of these birds undoubtedly nests high up on the cliffs in the neighborhood of Glacier Point, for during the spring and summer

months it is not unusual to see an eagle sailing to or from a point below the Glacier Point Hotel. About every third winter a pair of eagles may be seen flying about the valley, followed by one or two helping youngsters. Young golden eagles are readily distinguished from their parents by the white markings to be seen on the under side of the wings as they sail overhead.

The little pigmy owl (*Glaucidium gnoma californicum*) is a tiny fellow, not much larger than the English sparrow. Its head is round and without ear tufts. The yellow eyes have a wise and friendly look. Its posture when perched, is rather erect and the tail appears very short. The white breast is marked with clear, black pencilings, and its brownish gray back is checkered with small white dots. In flight it might remind one of a shrike, for it has the same twinkling wing-beat. It is fearless, fast of wing

and silent. This owl is a killer who strikes without warning; violence and sudden death are the very essence of its existence.

It is an owl strictly diurnal in his feeding habits.

In the Yosemite the nesting site of the pigmy owl is most often a deserted woodpecker hole and the deserted hole of the California woodpecker seems to suit their nesting needs to a nicety. The female does the incubating, the male does the hunting and brings in the food.



## WESTERN BELTED KING-



FISHER (*Ceryle alcyon caurina*). Three nesting pairs is about the average number of kingfishers to the valley. Each pair claims a stretch of about two miles of river which is patrolled consistently. During the months of June and July kingfishers are commonly seen along the river, but for some unknown reason, as the years go by, there is no increase in the number of nesting pairs. During the winter months the mated kingfishers separate; that is, they do not hunt together. The patrol is divided and each bird stays pretty close to its own mile of water. When spring rolls around again the kingfishers resume their old relations, they rollick together in happy flight dances, they fish together along the old two miles of river, and they take turns excavating and renovating the old burrow in the bank.

**MODOC HAIRY WOODPECKER** (*Dryobates villosus orius*). Hairy woodpeckers are never numerous on the floor of the valley. If one were looking for hairy woodpeckers one could likely locate four birds on a four-mile walk. However, the hairy is always with us, and when considering his status over a period of eight years we find that his num-

bers have been fairly constant. In winter and in summer this bird is most likely to be found in the cottonwood groves. The hairy woodpecker most often drills his nest-hole in cottonwood or willow, but a telephone pole will do in a pinch. The average height above the ground of his nest-hole is perhaps ten feet.

**WILLOW DOWNY WOODPECKER** (*Dryobates pubescens turati*). When considered over the eight-year period, the willow woodpecker population of the valley is perhaps slightly less than the "hairy" population. Also the "willow" population is not so constant as there is some slight fluctuation in numbers from month to month and year to year. In normal years the nesting population of willow woodpeckers in the valley is probably about six pairs. As a rule the willow nests much higher than the hairy woodpecker. Usually the nest-hole is drilled in a dead limb of a living tree some thirty or forty feet above the ground. Out of twenty nests noted only one was

less than ten feet above the ground. During the summer months the willow woodpecker is most likely to be found in the cottonwood groves and willow thickets along the river; later they take their families into the apple orchards, then, in the winter months, they are often found in the oaks along the warm north side of the valley. Except during the nesting season the willow woodpeckers do not stay put, as it were. That is, they have no particular haunt where they may be found day after day, as is the case with many kinds of birds. The willow stays in the valley, but he likes to ramble about and is here today and somewhere else tomorrow.

**WHITE-HEADED WOODPECKER** (*Xenopicus albolarvatus albolarvatus*) - Observations indicate that there has been a steady increase of white-headed woodpeckers on the floor of the valley. During the seasons of 1920 and 1921 only one nesting pair of white-heads came to our attention. In 1927

there were four nesting pairs and this year (1928) five nesting pairs were present in the valley. The white-heads nest much lower than do any of our resident woodpeckers. Nine times out of ten they drill their nest-holes less than ten feet above the ground; in one case the nest-hole was less than two feet

above the ground. The only nest that came to the observer's attention that was more than ten feet above the ground was drilled in a cedar pole that supported the diving platform at the lodge swimming pool, and this nest was less than six feet above the platform.

During the summer months the true haunt of the white-headed woodpecker is beyond the rim of the valley. Some of these birds drop down into the valley to winter and consequently there is an apparent increase in the white-head population on the floor of the valley during the winter months. As a matter of fact there have been months during the winter when the white-head was our most common woodpecker. Next to the California, the white-head is probably the most loquacious woodpecker.



#### NORTHERN PILEATED WOODPECKER

(*Phloeotomus pileatus abieticola*)—The status of the pileated woodpecker on the floor of the valley during the last eight years is simple. For three



years there was a single nesting pair. In those first three years during the summer and fall months the family group was occasionally seen, but the young birds always disappeared and there was no increase of pileated woodpeckers beyond the original pair. Then the female of the pair came to an untimely end and the old cock was left to pursue his lonely way. For the last five years this lonesome old widower has been the sole representative of his tribe on the floor of Yosemite Valley. His patrol covers a beat of about six miles and one may chance upon him in almost any section of the valley.

The call-note of the pileated woodpecker is a series of loud, low-pitched "kuk" "kuk" "kuku," reminding of one of the calls of the flicker. Most often one's attention is attracted to the bird by this call, but occasionally it is the loud thumpings that ring through the wood, as the pileated works on some dead wood, that leads the bird student into his majestic presence.

#### THE RED-SHAFTED FLICKER

Red-shafted flicker (*Colaptes cafer collaris*). The red-shafted flicker is a common bird, but never numerous; probably there are a dozen nesting pairs on the floor of the valley. Unlike the California woodpecker, there is no noticeable increase in numbers during the spring and summer months. There have been seasons in the past in the late fall months when wander-

ing bands have temporarily increased the flicker population of the valley, but, as a rule, when considered through the years, the status of the flicker remains unchanged.

In the Yosemite valley the flicker nests rather well up above the ground. The height of the nest-site would probably average twenty feet. As with the hairy woodpecker, his favorite nesting tree is the

cottonwood (*Populus trichocarpa*). Each year the flicker carves out a

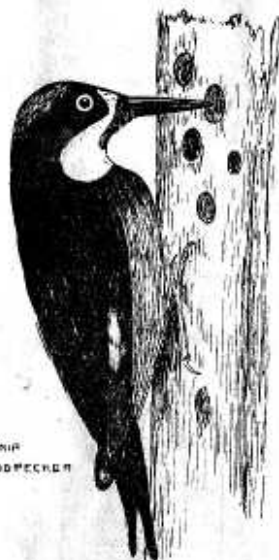


new home. Old flicker holes furnish nesting sites for sparrow hawk, saw-whet owl, and the flying squirrel. Lewis woodpeckers that occasionally winter in the Yosemite use the old flicker holes for sleeping quarters.

The flicker is an omnivorous feeder and he is our one woodpecker that habitually forages on the ground. However, when frightened from the ground he seldom flies far before coming to perch on some tree trunk in true woodpecker fashion.

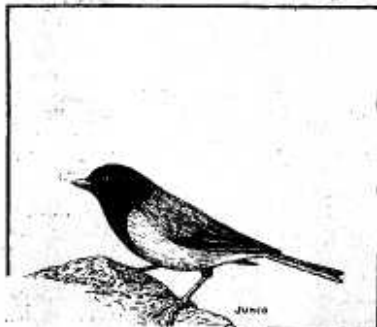
#### CALIFORNIA WOODPECKER (*Helanerpes formicivorus bairdi*)

—The California woodpecker is the bird that stores acorns for his winter food supply, and during the winter months he depends almost entirely on these stores to supply his daily bread. This being the case, providing the harvest has been sufficient, he is quite independent. During the eight-year period, however, there came one season when the acorn crop of both *Chrysolepis* and *Kellogg* oaks was an absolute failure and then the California woodpeckers were forced to leave the valley to seek sustenance elsewhere. In spite of their food-storing habits, however, there is a distinct migratory movement among the California woodpeckers, for the truly resident birds number about twelve, while during six months of the year the population amounts to four times this number. This woodpecker drills his nest-hole from twenty to forty feet above the ground, usually into the dead limb of an oak. The nest-hole is a capacious affair built to accommodate a number of birds as there is often a plurality of husbands. The nest-



holes are used the year around as sleeping quarters, and as shelters against the weather during periods of heavy storm.

#### Sierra Junco (*Junco oreganus*



*thurberi*)—There is some question as to whether the junco is a truly resident bird. It is a fact that the Sierra junco is more or less common on the floor of the valley the year around. During spring and summer pairs or family groups are to be found in almost any section of the valley. Toward the end of summer the juncos begin to congregate in flocks and perhaps post-nesting ramblings may take many of these birds into the higher sections surrounding the valley. Then stormy weather drives them down out of the higher mountains. When winter is on in earnest the flocks

of juncos remaining in the valley are concentrated about the warm packet at the mouth of Indian canyon. But, the question is: Are any of these juncos valley bred birds? The valley bred birds used to the crowds of summer campers become quite tame and boldly seek crumbs from man's table. The winter birds when they first gather about the mouth of Indian canyon are shy and not easily approached, a condition which would seem to indicate

that they were not valley bred birds. The fact that with the winter flocks of Sierra juncos are always a few slate-colored juncos would further strengthen the belief that the winter birds are migrants from more northern districts. Next to the blue-fronted jay, the Sierra junco is the first bird to be heard in song. Most any sunny morning after the first of the year, the song of the junco may be heard.

**Blue-Fronted Jay** (*Cyanocitta stelleri frontalis*)—Taking the year around, the blue-fronted jay is one of the most common birds of the valley. The jay population of the valley varies greatly through the year, but even in most unfavorable seasons, always a few manage to winter through. During the months of May and June the jays are most numerous for then the young of the season have brought about the natural increase. As the warm days of July approach many family



groups of jays climb higher, seeking the cool forests beyond the rim of the valley. During the fall months there is again a large jay population when the birds from above come back to the valley to take their share of the acorn crop. In seasons of a bounteous acorn crop there is likely to be a larger number of jays stay through the winter. The jays store no acorns for themselves, but they do claim a certain share of the acorns stored by the California woodpeckers. In seasons of plenty the woodpeckers seemingly do not begrudge the jays a certain share of their stores. The woodpecker likely realizes the advantage of having the jay as an associate, for the jay is quick to come to the aid of the woodpecker in case the acorn store is threatened by squirrel or other marauder. Also the jay acts as a buffer between the Cooper hawk and the woodpecker. Nine times out of ten the jay proves the victom of this "killer hawk." Given a free choice, the killer hawk would always select the jay as his possible victim, but in case there were no jays to be had he would then try to capture a woodpecker. Often then, the jay pays with his life for his share of the stored acorns.

**WATER OUZEL** (*Cinclus mexicanus unicolor*)—The water ouzel is distinctly a resident species. In the area under consideration, that is the upper end of the valley, from the swinging bridge below the lodge to Happy Isles and Mirror lake, there are usually four pairs. When the water is low in the Merced, from August until the following March, the ouzels are likely to be found along the main river. They feed along the shore and in the shallow riffles, turning over stones and leaves in search of food. Dur-

ing the cold winter months when the margins of the river are crusted over with ice the ouzels are forced to do their fishing in the deeper water of the open river, where they swim about and dive with the proficiency of the most expert of the diving ducks.

Occasionally where ice has bridged the river they will dive, swim several yards down stream, and come up to the surface below the ice-bridge. When spring brings floods to the main river the ouzel pairs move onto the foaming side

streams, most likely renovate their nests of other years, and prepare for the nesting campaign. One pair nests in a niche of a spray-splashed fallen log near the base of lower Yosemite Fall. Two nests are plastered to mossy boulders along Tenaya creek below Mirror lake, and a fourth pair of ouzels have a nest-site where the river leaps madly among the boulders above Happy Isles. For several years a pair nested on a beam under the Clark bridge, but recent improvements have made this site unavailable.

As a singer the ouzel ranks high, and by some he is considered the most glorious singer of all Yosemite

birds. There is something wild and free about his rich rolling notes and his enchanting trills that tunes one in on the spirit of the out-of-doors. The very lilt and swing of his song seems to fit so well with his wild free life among the boulders and dashing spray. And strangely enough his notes ride free and clear above the tumult of roaring waters. It is, however, in the dead of winter when the ouzel's song may be heard to best advantage. Perched on an ice-capped boulder, the icy waters reflecting the image of his plump figure, the ouzel pours forth his soul in song. Fortunate, indeed, is he who is privileged to know the ouzel in his winter haunts.

**SACRAMENTO SPURRED TOWHEE** (*Pipilo maculatus falcinellus*)—There is a noticeable migratory movement among the spurred towhees for these birds are more numerous on the floor of the valley during the nesting season than at any other time of year. After the nesting worries are over for the year many of the towhees take a late summer vacation and

travel into the higher mountains. When winter comes on and snow covers the ground at the higher levels there is a down-mountain movement which takes most of the towhees to elevations below the levels of any considerable snowfall. Nevertheless a certain few individuals are likely to spend the winter in the valley. With the few individuals who remain in the valley through the winter there is a cross-valley movement. Birds that have spent the summer in the cool thickets along the south side of the valley move onto the warm alluvial fan that spreads out at the mouth of Indian canyon to spend the winter. It is probably a question of food supply rather than a question of temperature that sends the birds to the north side of the valley, for towhees will remain on the south side of the river so long as there is open ground. During periods of storm, and afterward when snow may lie a foot deep on the valley floor, the towhees find food and shelter under the thick matted ceanothus bushes about their winter haunt. By staying on the south side of the valley until after the first heavy snowfall the store of ceanothus seeds lying under the bushes on the north side is reserved until time of need.



**RED-BREASTED NUTHATCH**  
(*Sitta canadensis*)

The red-breasted nuthatch population in Yosemite valley remains almost constant through the season. This population is small, however, and at no time are there more than a dozen pairs present on the floor of the valley. They are not

much given to wandering, and day after day they are likely to be found in their chosen locality. They do not really sing, but they are loquacious little fellows, and their tooting call notes, like the sounding of a tiny Christmas horn, may be heard most any time of day. As a rule, the red-breasted nuthatch

feeds rather high in the trees, and, confining his foraging during most of the year to trunk and main branches, he is more likely to be heard than seen.

Through most of the year the red-breasted nuthatch is an insect feeder, and he gleans his living from the crannies in the bark. Being able, as he is, to move with ease up or down tree trunks or along the underside of limbs, he has an advantage over the woodpeckers and creepers that forage more or less over the same territory. Going head first down the tree trunks, he is likely to spy insects or larvae that were overlooked by the up-treading woodpeckers and creepers. In the fall of the year, when pine nuts ripen, he has another source of food supply, and

Red-breasted  
Nuthatch



then he may be seen in the needle tufts plucking nuts from the open cones. To get at the meat, the nut is wedged in a convenient crack in the bark, and then, with a few strokes of his strong, sharp bill, the nuthatch cracks the shell.

For future reference, some nuts are stored away in cracks in the bark. The red-breast stores much in the manner of the blue-fronted jay, but he does not take the jay's precaution of hiding his treasure with a bit of bark. And, while the jay stores but one prize in a niche, the nuthatch may poke many nuts into the same crack. Perhaps the nuthatch does not need to be so cautious as the jay, for during the winter he can almost always pick up pine nuts that have fallen to the ground.

In the fashion of the woodpeckers, the nuthatch drills his own nest-hole. And like the woodpecker, both birds of the pair take turns at the work of drilling. Nuthatches that we had under observation started the work of drilling on the 13th day of April. They chose a

dead stub of cottonwood. The cottonwood stood on the bank of the river, and the nest-hole was located twenty feet above the ground. After working industriously for a week, the cavity was several inches deep and the birds could quite disappear in its depths. Even so, we could always tell when a bird was at work, for at frequent intervals a shower of tiny chips would come fluttering to the ground.

About the time the birds began drilling the nest-hole, the female developed a coquettish disposition and was often seen flirting with the male. When in a particularly loving mood, the female would fluff out her feathers, raise her tail, and utter a rapidly vibrating ratchet note. When in this highly excited state, the female was anything but an attractive bird. Disheveled, with every feather standing on end, she fluttered before her mate, trying to arouse in him the mating instinct. It took time, but, of course, she was successful, and on April 20 the male capitulated and embraced his mate. Now they were on their honeymoon, work ceased in the cottonwood tree, and there were to be a few brief days of leisure before the enslavement of family cares were upon them.

The playful days of the honeymoon came soon to an end. The nest-hole was complete, but it had still to be furnished. The nest was to be lined with feathers, and on May 1 the female nuthatch raided a robin's nest to procure the material. While the robin was away, the nuthatch stole the feathers, and, while she was tearing loose feathers from the nest, the male perched close by and lent his moral support. The birds worked intermittently for perhaps a week, the female spending more and more time in the nest, and then on May 12 she settled to her task of incubation — the eggs.

On the evening of May 19 the male nuthatch took upon himself a new task. Fifteen feet away from the nest-hole was a bruised pine tree with pitch oozing from a fresh wound. In ten minutes' time the nuthatch made seven round trips between the pine and his nest-hole. Each trip to the pine he would take a globe of pitch on his bill, fly to the cottonwood, and spread it about the entrance to the nesting cavity. Each time after smearing the pitch he would carefully wipe

his bill on a branch. The male worked hard at his sticky task, and when finished, he had an almost complete ring of pitch an inch wide bordering the entrance to his home, the circle was broken only at the lower edge of the nest-hole by a narrow patch quite free from pitch.

From observations, it would seem that this habit of circling the nest-hole with pitch is a common practice with the red-breasted nuthatches. Very likely the smearing of pitch about the nest-hole is a pre-

cautionary measure to safeguard the young against vermin. Until the time that the young are strong enough to come to the entrance, the parent birds dive directly into the nest without touching the sides. When the young begin to poke their heads out of the nest-hole to greet the parents, then the parent bird clings to the pitch-free spot where the circle is broken, and the young bird that happens to be at the entrance gets the food.

#### Short-Tailed Mountain Chickadee

The chickadee (*Penthestes gambeli abbreviatus*) is a small bird, a bird about half the bulk of an English sparrow. It wears a black cap and a black bib under its chin. Its cheeks are white, and there is a short white stripe above the eye. The back is blue-gray and under parts are light gray, almost white.

The chickadee is active and alert; and when searching the leaf clusters and needle tufts for food, it is apparently just as much at ease hanging head down as in any other position.



The chickadee is a well-known bird, for in one form or another it ranges clear across the continent. Well known as it is, however, its is probably better known for its call than for its appearance. The common call-note, uttered in a harsh, stringy voice, seems to say: "Chick-a-dee-dee." The song is a lovely, clear, whistled musical phrase of three syllables. Often visitors to the Yosemite ask, "What bird is it

that says, 'Oh, dear me'." Oddly enough, the simple little song of the mountain chickadee seems to catch the human ear more often than any other song of the Yosemite; not so much on the floor of the valley, but along the trails beyond the rim of the valley.

The chickadee is a rather common nesting bird in the higher sections of Yosemite National Park, but is but sparsely represented as a resident bird on the floor of the valley. A half dozen nesting pairs would, perhaps, be the average number of resident birds on the floor of the valley. Vertical migration is practiced among the chickadees to a certain extent and birds from the higher sections invade the valley during the winter months. At this season small flocks may be found in almost any section of the valley. Presumably, numbers of chickadees winter at elevations below the Yosemite, for it is during the month of March and April that they are most numerous in the valley. Flocks linger about the floor of the valley during these months, but finally the up-mountain movement takes the greater number to the country beyond the "rim" and only the few nesting birds remain through the summer. Chickadees returning from the high mountains do not put in their appearance in the valley much before Christmas. During most of the year chickadees are common in all the high sections of the park. In late summer and fall they range upward to timberline, and even in the dead of winter they may be found in the forests beyond the rim of the valley at elevations varying from 7000 to 9000 feet. They are hardy and resourceful birds.

The chickadee is an omnivorous feeder, which gives him a big advantage over birds of a more re-

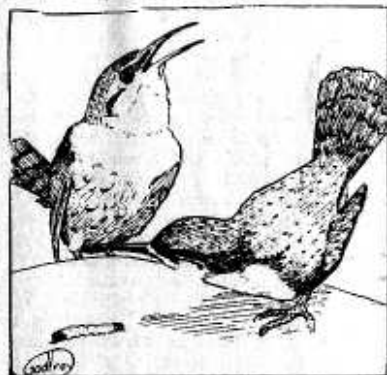
stricted diet. For the most part, however, taking the seasons through, the chickadee is a foliage feeder, confining his foraging to trees and shrubs. During the winter months when insect food is scarce, the chickadee may be seen extracting nuts from pine or cedar cone. Occasionally, too, he may come down and forage on the ground. The winter diet of nuts apparently agrees with him, for he seems just as cheerful and just as active as during the spring and summer months.

As a rule, the chickadee nests in natural cavities in tree trunks; occasionally he may nest in a deserted willow woodpecker hole, and one

pair here in the Yosemite tucked their nest in a crevice among rocks that formed the foundation for the Sentinel bridge. But whatever the case may be, the one feature that the chickadee insists upon is that he have a snug-fitting entrance to his nest-hole. On two occasions chickadees were found using a nest site with an entrance so narrow that they had to wriggle and squeeze to get in and out of the nest. No doubt the chickadee knows from experience that the smaller the entrance hole the better the nest is protected against such prowling enemies as would feed upon eggs or young.

#### Dotted Canyon Wren (*Catherpes Mexicanus Punctulatus*)

In the Yosemite valley, the canyon wren lives most of its life among the great jumbled boulders of the talus slopes. In spring, summer and fall they are found in the rock slides on both sides of the valley. In winter they concentrate on the talus along the base of the north wall. Also in winter they are



likely to be found about the build ings and woodpiles of the new vil lage. During the season each rock slide has its pair of wrens and the distance between pairs would probably average a half mile.

The canyon wren is easily distinguishable from all other birds of the Yosemite. Its general coloration is a rich reddish brown, with a throat and chest that gleam white in sharp contrast. It has the habit of bobbing somewhat in the manner of the ouzel and when going through this strange maneuver

one is likely to catch a flash from its gleaming throat. The white of throat and chest acts as a good reflector to throw light into the dark crannies as the bird moves about in search of hidden insects.

Living in the rock piles this wren might easily keep out of sight, but it is of an inquisitive nature and must bob up from behind its rock to have a peek at passing strangers.

Sitting quietly the bird student may easily arouse its curiosity and draw it close by uttering a few sharp squeaks. At the proper season this same trick will bring out a whole family of wrens. On one occasion I had wrens actually hopping over my feet and examining my shoes with apparent interest. But, hopping is not just the right word to describe the locomotion of the canyon wren, for it really appears at times to scurry over the boulders in the manner of a lizard. And by the way, the blue-bellied lizard is common in the ecological niche of the canyon wren; both are lovers of the hot rocks. In its particular forage niche the canyon wren has a clear field to a food supply not available to other birds. It knows the dark caverns and secret passageways that lead among the boulders, and when snow lies deep on slope and level, it is still safely secure against hunger. Its feeding habits and inquisitive nature lead to exploration of out-of-the-way places and often during the winter months into the dwellings of men. Most birds become confused when they find themselves in a room, and often excited birds will beat against a closed window in



an effort to escape. Not so the canyon wren. In a dark attic or in a lighted room with windows all about, it becomes neither excited nor confused; it knows how it came in and just how to get out. For weeks one winter a certain canyon wren came daily into the postoffice corridor to scamper about the walls and floor in search of insects.

The canyon wren sings every month in the year, and it would be hard to say which is the best singing month. The song is a series of ten or twelve round, clear notes

that come ringing down the scale. Each note is distinct, rapid at first, but coming slower and slower as they drop down the scale. Between the last few notes there is almost a pause, and often there is a cute little up-twisted, curly note that puts a most effective finish to the song. When singing from a cliff with a granite sounding board at its back, the canyon wren spills a down rippling flow of notes that are never to be forgotten by him who is so fortunate as to hear.



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