YOSEMITE NATURE NOTES

NOVEMBER, 1931

Volume X Number 11

THE YOSEMITE NATURAL HISTORY ASSOCIATION
ITS PURPOSES

1. To gather and disseminate information on the wild-life of Yosemite National Park.
2. To foster the activities of our Yosemite Museum (in co-operation with the National Park Service), adding to its collections by the purchase of exhibit materials.
3. To promote the educational program of the Yosemite Naturalist Service.
4. To assist in the publishing of "Yosemite Nature Notes".
5. To study living conditions, past and present, of the Indians of the Yosemite region; to encourage their arts and perpetuate their traditions.
6. To help maintain in Yosemite Valley a library of historical, scientific, and popular interest.
7. To further scientific investigation along lines of greatest popular interest and to publish, from time to time, bulletins of non-technical nature.
8. To strictly limit the activities of the association to purposes which shall be scientific and educational, in order that the organization shall not be operated for profit.

We invite anyone interested in Yosemite to join our Yosemite Natural History Association. Included in this month's issue is a blank showing combination memberships with the American Nature Association and the American Forestry Association. If you are already a member of either of these associations, we hope you will renew through us. Help us double our membership before summer.

Yosemite Nature Notes

THE PUBLICATION OF
THE YOSEMITE EDUCATIONAL DEPARTMENT
AND THE YOSEMITE NATURAL HISTORY ASSOCIATION
Published Monthly

Volume X November 1931 Number 11

Feeding Habits of the Woodpeckers in the Yosemite Valley

Enid Michael

PART II

Nuttall woodpecker (Dryobates nuttalli) is a rare winter visitant to Yosemite valley. The Nuttall being a rare visitant to the valley we have not had the opportunity to studying the feeding habits of many individuals. However, the lone individual that is so often found wintering in the territory about the mouth of Indian canyon has been studied with care and if this bird behaves normally the Nuttall encroaches but little on the feeding range of any other woodpecker of the district. It is true that there is slight competition between the Nuttall and the Hairy woodpeckers but this is because the Hairy occasionally leaves the cottonwoods and comes into the oaks to feed. From our observations it would appear that the Nuttall woodpecker confines his foraging activities more closely to a certain kind of tree than do any other of the woodpeckers of the Yosemite. Except in one instance we have never seen the Nuttall feeding in any tree save the Kellogg oak.

On the one occasion that we found the Nuttall woodpecker away from the Kellogg oaks he was foraging in an Incense cedar, but he was not foraging on the limbs as woodpeckers usually do when working on an old cedar. This bird was on the main trunk, searching for crevices of the bark and working around and upward in the manner of a Sierra Creeper. We have never seen the Nuttall come to the ground to feed, nor have we ever seen him behave as a flycatcher.

Northern White-headed woodpecker (Xenopicus albolarvatus albolarvatus) During our eight years residence in Yosemite valley the White-headed woodpecker has only been a common nesting bird here in the years of 1926 and 1927. We used to think of him as belonging above the "rim." In foraging these birds show a preference for coniferous trees, but when feeding young they are likely to be found in any species of tree. During the winter months they confine their hunting activities almost exclusively to the Incense cedars (Libo

cedrus decurrens). Although possessed of a drilling or boring ability equal to that of other woodpeckers of their size they seldom resort to the drilling method to procure food; they pry off scales of bark but seldom dig deep.

The Incense cedars of Yosemite valley are all more or less infested with a certain bark louse. In young trees these lice find refuge under the scaly bark of the main trunk in old trees they are found under the bark scale of the branches. About these nests of bark lice and larvae there is an excretion of honey dew; it is this combination of meat and honey that attracts the White-headed woodpecker to the cedars.

In young cedars that still retain the scaly bark the White-headed woodpecker will forage on the main trunk, spiraling as he moves upward, and flicking off bits of bark as he goes. In the older cedars it is the limbs that attract him. As he hitches along the horizontal limbs, prying off scales as he goes, he works from side to side but seldom explores the undermost curve of the branch—that is he seldom hangs back down as does the Williamson Sapsucker. Foraging as they do, they are not so noisy as the drilling woodpeckers and it is likely to be the scratching of claws on bark, or a shower of scale chips that attracts one's attention to a feeding Whitehead.

At all seasons of the year the White-headed woodpeckers usually go about in pairs, and occasionally there may be a third bird. As the birds move about they may forage in separate trees, but many times during the day they will meet to exchange notes in squeally conversational voices. In the same neighborhood they will be found day after day, but their daily forage beats will take them over a square mile of territory. They are never long silent and their ringing whistled call notes will direct one to the tree where they happen to be working.

In foraging the White-headed's hunt for insect life is pursued in a rather cursory fashion. They move about often, never exhausting the possibilities of any one spot, however, when it is considered that they work over the same territory day after day, perhaps, in the long run, very little in the way of food is overlooked. With the Whitehead it is like the man who fishes the same stream habitually; the fish he misses today will be waiting for him tomorrow.

At nesting time the White-headed woodpeckers forage differently as is indicated in the following paragraph. At the nest of the White-headed woodpeckers in the Curry apple orchard we found both parent birds bringing in food. One of the pair foraged in the nearby pine forest while the mate applied her efforts in the orchard. The bird working in the forest brought in spiders, crane flies and other long-legged, bristling insects. The bird foraging in the orchard brought in wooley aphids, and perhaps other soft-bodied smeary things. After each visit to the nest the bird bringing in aphids would wipe her bill on a branch, or beat it vigorously against a firm limb to jar loose the sticky substance.

A few days later when Ladybird beetles (Hipodamia convergens) swarmed into the orchard there was a change of diet for the youngsters for then the bird that happened to be working in the orchard brought this food in.

When the right sort of food offers, the White-headed woodpecker may be found feeding chickadee fashion, swinging head down in the needle tufts of a pine to scrape off scale-like insects.

Key to the Amphibians and Reptiles of Yosemite National Park, California

[This key compiled by F. Willis King, M. A., Instructor in Biology, Wilmington College, Wilmington, Ohio. Student of Yosemite School of Field Natural History, 1931.]

With corrections suggested by Dr. Tracy I. Storer, University of California

I. Vertibrates with smooth, usually moist, skin, no scales, claws, or nails—**Amphibians.**

A. Body elongate, with tail which is present throughout life—**Salamanders.**

1. No naso-labial groove present (a slight groove between nostril and the upper lip), no costal grooves present (vertical furrows between the fore and hind limbs may be in evidence in the male in winter).

a. **Pacific Coast Newt—Triturus** (Notophthalmus) **torosus.** Color reddish brown above, lighter beneath, skin rough with small black spots. Western section of the Valley floor and regions lower, near pools and ponds.

2. Naso-labial groove present, costal grooves present.

a. Tongue not attached in front, but by central stalk.

(1) Dwelling at high altitudes near or above 10,000 feet, close to small streams, chocolate color with grayish spotting—**Mount Lyell Salamander—Spelerpes** (Eurycea) **platycephalus.**

b. Tongue attached at its anterior margin.

(1) Toes on the hind foot, five.

(a) Tail without a basal constriction, costal grooves, thirteen in number.
Aboreal Salamander—Aneides lugubris lugubris.
Found in damp situations, in or under logs and stones, rarely in decaying trunks of living trees, at 4,000 ft. el. or lower. Color, dark brown with small spots of yellow.

(b) Tail with a basal constriction, costal grooves, eleven, ten visible folds. **Esatina sierrae.** Found chiefly under decaying wood, in moist situations, 3,500 to 7,100 ft. el. and occasionally higher. Body brownish with yellow spots.

(2) Toes on the hind foot, four.

(a) **Slender Salamander—Batrachoseps attenuatus.**
Back brownish, side and under surfaces blackish with silvery spots. Found below 3,500 ft. el. in and under decaying logs, under rocks and in small burrows.

B. Body of adult short and tailless—**Toads and Frogs.**

1. Parotoid glands present. (A prominent elevated glandular structure back of each ear membrane.) **Toads.**

a. Toads living in regions of 4,500 ft. el. and lower. Space between parotoid glands broader than the width of one gland. **California Toad—Bufo boreas halophilus.**
Upper surface grayish green with blackish spots or streaks, light mid-dorsal line.

b. Toads living about 6,000 ft. el., space between the parotoid glands not more than the width of one of them. **Yosemite Toad—Bufo canorus.**
Male smaller than the female, ground color olive green with minute black dots rimmed with white, warts few. Female larger with clearly defined patches in black, bearing warts and outlined with white, on a lighter background.

2. Parotoid glands absent.

a. Toes with expanded adhesive discs at their tips, adults under two inches in body length.

(1) **Pacific Tree Toad—Hyla regilla.**
Found in all life zones in the park. A dark streak from the tip of the nose, through the eye, to behind the ear membrane. Found usually near the water. Back usually spotted or streaked. Coloration widely variable.

b. Toes without expanded tips—**Frogs.**

(1) The Yellow-legged Frogs. Found along streams and ponds.

(a) Below 4,000 ft. el., occasionally higher.
Calif. Yellow-legged Frog—Rana boylii boylii.
Heel reaching beyond nostril when hind leg is bent forward, coloration blackish, dorsal markings indistinct.

(b) Above 5,000 ft. el.
Sierra Yellow-legged Frog—Rana boylii sierrae.
Heel not usually reaching beyond the nostril when the hind leg is bent forward. General coloration lighter, with more yellow, dorsal blotching more distinct than (a).

II. Vertebrates with the body covered with scales, skin dry. **Reptiles.**

A. Reptiles with four legs and several rows of scales on the under side of the body. **Lizards.**

1. Lizards with the tongue thick and non-protractile. **Swifts.**

a. Scales on the back of the thigh not keeled, 45 or more scales per row from back of head to a line across the back of the thighs. Six rows of irregular dark blotches along the back and sides. Usually above 5,000 ft. el. Size, five inches or under. Found on rocks, trees, and ground. **Mountain Lizard—Sceloporus graciosus graciosus.**

b. Scales on back of thigh keeled, less than 45 scales in a dorsal row from head to a line across thighs. Back dark with brownish undulations.

(1) Blue on the throat divided into two patches. Ventral surfaces showing light between the dark areas. Generally below 6,000 ft. el. **Western Fence Lizard—Sceloporus occidentalis occidentalis.**

(2) Under parts solidly bluish black, darker than (1). Above 4,500 ft. el. **Tenaya Bluebellied Lizard—Sceloporus occidentalis taylori.**

2. Lizards with the tongue protractile.

a. Lizards with a conspicuous lateral skin fold.

(1) Scales in fourteen lengthwise rows.
San Diego Alligator Lizard — Gerrhonotus scincicauda webbii.
Usually with about ten transverse bands, color grayish or greenish with orange markings. Generally below 4,000 ft. el. Strictly terrestrial.

(2) Scales in sixteen lengthwise rows.
Sierra Alligator Lizard—Gerrhonotus palmeri.
Color brownish to olive green with white spots on the sides. Found about 3,500 ft. el. Generally terrestrial, occasionally in small trees or shrubs.

b. Lizards without a lateral skin fold.

(1) Femoral pores present. (A row of glandular pores on the under side of the thigh.) Tail very long, at least twice the length of the head and body, with rough scales. Dorsal body scales granular, ventral scales in eight rows. Terrestrial in habit.
California Whip-tail Lizard—Cnemidophorus tigris (tessellatus) **mundus.** Moves very swiftly, found in shady areas, usually below 3,500 ft. el.

(2) Femoral pores absent, all scales very smooth and shiny. **Western Skink—Eumeces** (Plestiodon) **skiltonianus.**
Young have the head and body dark brown with yellowish stripes on the back, pale blue beneath, tail blue. Medium size individuals often plain golden. Adults with coppery head, pinkish tail, body brownish olive and sides bluish green; 2,000 to 5,000 ft. el. Terrestrial, among rocks and debris in shady places.

B. Reptiles without limbs. Ventral scales in a single row. **Snakes.**

1. Snakes with elongated poison fangs in the front of the mouth and a pit between the eye and the nostril, normally with rattles on the tail.

a. **Pacific Rattler—Crotalus oregonus.**
Wide spread in the Yosemite region, usually below 8,000 ft. el. Bite very dangerous.

2. Snakes without fangs and no pit between the eye and nostril, all local forms non-poisonous and harmless.

a. A single row of ventral scales posterior to the anus.
Rubber Snake—Charina bottae.
Color brownish, yellow beneath, tail blunt, scales smooth. Found in moist places on the floor of the valley and elsewhere in the transition zone within the park.

b. Scales posterior to anus in two rows (sub-caudals).

(1) Dorsal scales with a median keel.

(a) Scales in 19 to 21 rows around mid-body region.

[1] Scales on the upper lip, usually seven on each side.
Pacific Garter Snake—Thamnophis sirtalis infernalis.
Scales in nineteen rows, a light median and lat-

eral stripes, often reddish spots on the sides, common in Yosemite Valley.

[2] Scales on the upper lip, eight on each side.

[a] Body scales in nineteen rows, living in high mountain meadows. **Mountain Garter Snake—Thamnophis ordinoides elegans.**
Slender bodies with three yellow stripes.

[b] Scales in twenty-one rows, no mid-dorsal stripe but with lateral blotchings, color grayish, size large.
Giant Garter Snake—Thamnophis ordinoides couchii. Found in meadows of Yosemite Valley and Little Yosemite.

(b) Scales in 29 or more rows. A series of dark brown dorsal blotches. **Valley Gopher Snake — Pituophis catenifer heermanni.** Ground color of body yellowish, size often large, below 4,000 ft. el.

(2) Dorsal scales without a median keel.

(a) Snakes without transverse color banks. Scales in seventeen rows.
Western Yellow-bellied Racer — Coluber constrictor flaviventris. Dorsally plain brownish, yellow beneath, found chiefly in meadows below 4,000 ft. el.

(b) Snakes with a single transverse color band just back of the head. Scales usually in fifteen rows.
Western Ring-necked Snake—Diadophis amabilis amabilis. Small snakes, ground-dwelling in middle altitudes.

(c) Snakes with many transverse color bands.

[1] Broad bands of brownish black alternating with narrow bands of creamy white. **Boyle King Snake —Lampropeltis getulus boylii.** Usually 4,000 ft. el.

[2] Crosswise rings of red, black, white, black, etc. **Coral King Snake — Lampropeltis multicincta.** Resident in Yosemite Valley along talus slopes.

References: **Animal Life in the Yosemite,** by Grinnell and Storer, 1924.

Manual of the Vertebrates of the United States, by Dr. Henry S. Pratt, 1923.

A synopsis of the Amphibia of California, by T. I. Storer, 1925.

The Reptiles of Western North America, by Van Denburgh.
Vol. 1. Lizards.
Vol. 2. Snakes and Turtles.

The Amphibians of Western North America, by J. R. Slevin. Occ. Papers, Calif. Acad. Sci. No. 16.

The Acorn Crop: A Vital Necessity to Animal Life of Yosemite

RANGER-NATURALIST A. E. BORELL

The acorns of the Kellogg Black Oak are now ripe and have been falling to the ground for the past few weeks. These acorns were the staff of life of the early-day Yosemite Indians and are still gathered in large quantities especially by the older squaws of the local village. Not only the Indians but a number of birds and mammals count on the acorns as an important part of their winter food supply. As a result there is now great activity and competition among certain species in their quest for acorns and for suitable places to store them.

Among the birds the California woodpeckers and the blue-fronted jays are the most persistent and enthusiastic in their search for and storing of acorns. With the California woodpeckers the storing of acorns is almost an obsession. Hour after hour and day after day they can be seen and heard drilling small holes in the trunks of trees, in buildings, in fances, and in telegraph poles. Into each hole an acorn is securely hammered. They also utilize natural cracks in wood and spaces between shingles and shakes on our buildings.

MUST ALSO FEED ROBBERS

Usually far more acorns are stored than they can use, but the woodpeckers must store more than enough for themselves because their stores are continually robbed by squirrels, chipmunks, and jays. In early days the Indians robbed woodpecker cupboards when their own chuckas were empty. The woodpeckers store the acorns for the kernels they contain and not, as many people believe, for the insects which are attracted to the acorns. The California woodpeckers are noisy at their best and at this time of the year are especially so. From morning until night they are continually chattering and wrangling among themselves and the presence of a jay at their storehouse brings on a great outburst of protest. They are so ardent in the care of their stores that when a dead oak limb containing an acorn store fell to the ground recently near the Ahwahnee Hotel the woodpeckers tried to light upon it even while the workmen were chopping and sawing.

The blue-fronted jays also store acorns but not in the same way as do the woodpeckers. They store some in holes and crannies of trees but most of them are buried singly here and there just beneath the surface of the ground. Many of these are later recovered, but many are never found and thus unintentionally the jay is responsible for the careful planting of many oak seeds. Throughout the foothills at the lower border of the park the blue-fronted jay is replaced by the California jay, which likewise gathers acorns.

PIGEONS LIKE THEM

The band-tailed pigeons do not store acorns, but eat them greedily whenever available. Usually the acorns are swallowed whole along with the shells. However, the following observation indicates that they prefer shelled acorn meats to

found a way of getting them. On September 22 a flock of 10 pigeons were watched as they foraged over one of the main paved highways of the valley floor. At the approach of a car they would fly off the highway or into a nearby tree, but immediately return to pick up the kernals from the acorns which had been crushed by the car. The fact that they continued to return to the highway instead of remaining beside the road where there were plenty of acorns and where they would have been undisturbed by passing cars indicated that they much preferred the shelled to the unshelled acorns. It also shows that cars may be a benefit to at least some of our birds and also shows how rapidly some of our wild creatures avail themselves of a new or different food supply

THE BEARS ALSO

A number of mammals also eagerly gather and store the nut crop from the oak trees.

In some regions the acorns furnish the main food upon which bears fatten in preparation for winter hibernation. Here in Yosemite the bears have been observed as they climbed about in the oak trees searching for the acorns that had not yet fallen. They proved very adept at climbing over small limbs and pulling them in so as to examine the ends of the branches for remaining acorns.

Deer are not at all averse to eating acorns. It is a common occurrence at this time of the year to see deer beneath the black oaks munching acorns, shells and all.

The California gray squirrel is also fond of acorns and coaches the surplus for later use by burying them here and there in shallow pits which are carefully filled with earth.

California ground squirrels have been observed as they placed several small acorns in their cheek pouches and carried them into their burrows.

Chicarees and chipmunks have also been seen as they carried away recently fallen acorns.

Probably flying squirrels and woodrats also forage on acorns, but I have no positive evidence of this.

TINY MICE ARE BUSY

One of the smallest mammals which profit by the acorn crop is the little white-footed mouse (Peromyscus). They are exceptionally numerous this fall and in many places have cached their small stores of acorns, usually partly eaten. In at least two cases they have carried acorns into automobiles and stored them beneath the cushions. In another case the white-footed mice had placed acorns in various places about the attic of a house.

We often hear people speak of preparing for a hard winter, but it is usually in jest, for with most of us life goes on about the same during the winter as at any other time of the year. This is not the case with many of our wild animals. To them winter is a critical and vital period and food in the form of fat or stores must be gathered in order to tide over the winter period when food is scarce. Instinct warns the animals of this and they are quick to recognize acorn season and to begin feeding upon and storing acorns as soon as they are ripe. If the acorn crop fails it means a lean winter and possibly starvation for some of our wild animals.

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