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Comments on the Naturalist Work at Tuolumne Meadows

RANGER-NATURALIST CARL SHARSMITH

Tuolumne Meadows is a unique and valuable station for the naturalist service. An ideal camping place, it is attracting an ever increasing number of campers, most of whom stay four to five days, a good many as long as ten days, several who stay practically the entire season. The number of campers returning to the meadows to camp year after year is steadily growing.

The Tuolumne Meadows region is a center for the Yosemite High Sierra. Innumerable hikes and nature walks rich in interest are possible and available to the naturalist to suit the great width of interest in the large followings of the past season. A supplement to the Yosemite Valley, the Tuolumne region offers great possibilities to the nature guide to make more clearly understandable the geological forces which made the famous valley. The features of glaciation are clearly marked; erratic boulders, polished pavements, glacial lakes in cirques

abound and are close at hand and easily accessible on short hikes. The Conness glacier, easily the most accessible and active glacier in the park, giving opportunity to examine moraines, crevasses, etc., is but a half hour's drive and three miles' walk from the ranger station.

The wild flower exhibit which is easily maintained gives evidence of the richness of the flora; the proximity of the "contact" zone with its mineralogical and geological interest, mountain peaks of varying degrees of difficulty to climb, timberline forests and alpine flora and fauna, the delightful summer climate; above all the great numbers of responsive and enthusiastic campers make Tuolumne Meadows a splendid field for the naturalist service.

TRIPS ENJOYED

Early in the 1931 season it was found best to have field trips of wide variance, trips easy and trips

strenuous. Nature walks involving but little exertion had a large following of elderly people and children; climbs on the more difficult peaks, some of which necessitated the use of rope and ice-axe, gave much pleasure and satisfaction to the more vigorous. Following is a list of trips which have met with much success during the past season:

1. **Lembert Dome**—A very popular short afternoon climb affording a wide panorama, glacial erratics, polish, seven species of conifers, etc.

2. **Flower Walk**—An easy afternoon or morning walk along riverbank above ranger station. At least twenty species of flowers in July.

3. **Mt. Dana**—A full day's trip, driving to base of mountain. The most climbed high mountain in the park, and the one offering the most extensive view of any.

4. **Gaylor Lakes**—An easy one day trip, driving to foot of trail. On the "contact" zone; old mines rich in minerals, alpine conditions of flora and fauna for those unable to climb higher peaks.

5. **Budd Lake and Cathedral Lake and Cathedral Peak**—A good one day's trip, driving to foot of trail. More strenuous can easily climb Cathedral if leader chooses party with care, and has some experience in alpine rope work himself.

6. **Dana Meadows**—Rich flower gardens on the south slope of Dana. A very popular half day walk driving to meadows.

7. **Mt. Conness**—Via Saddlebag

Lake. A strenuous all day trip but well worth the effort. Route can be varied so as to include a diversity of climbing and use of both rope and ice-axe.

EASILY REACHED GLACIER

8 **Conness Glacier**—Most accessible and active glacier in the park. Leader should be equipped with ice-axe for occasional step cutting, etc. A moderate full day's trip, driving to Saddlebag lake.

9. **Unicorn Peak**—From Elizabeth lake, easiest of the Cathedral group of peaks. A one day's trip, driving to foot of trail.

10. **Echo Peaks**—Similar to Cathedral, though not so steep. Only point in Tuolumne Meadows region from which Half Dome, Glacier Point, El Capitan are visible. A moderate one day's trip via Budd or Cathedral lakes.

11. **Mono Pass**—Easy one day's trip, driving to foot of trail. Head of Bloody Canyon, with fine view of terminal moraines. Rare blue columbines. Trip can be varied by branching onto Parker Pass trail.

12. **Young Lakes**—Beautiful lakes near base of Conness, with fine High Sierra panorama. A moderate one day's trip.

13. **Glen Aulin**—A one day's trip down the Tuolumne. Basaltic plug, waterfalls.

14. **Mount Lyell**—A feasible weekend trip, make in one full day and two half days, renting pack mules at Lodge. Maclure can also be climbed with Lyell on same day. Glorious view of Ritter Range, etc.



Rattlesnake! Rattlesnake!**RANGER-NATURALIST C. H. ONEAL**

Rattlesnake! Rattlesnake! The very word causes instant attention. Distorted visions flit through every mind. Experiences real and imagined are relived. Exaggeration and fancy usually run riot until reality vanishes.

How does a rattlesnake make a kill? This was a question that interested us. We determined to find out. Behind the museum are a number of Pacific rattlesnakes (*Crotalus oreganus*) in a glass case. Their usual diet is composed of mice that are caught in Bob Selby's traps. A live mouse was a logical victim. This was easily secured. At about 11 a. m. the snakes were sleepy on the warm porch. A stick was used to stir them from their slumbers and then the white-footed mouse was introduced. Instantly the mouse sensed the danger. He ran and jumped around the case. Over gravel and snakes he went until nearly exhausted. Then he crouched in a distant corner for several minutes. The snakes in the meantime were unconcerned.

MOUSE IS CHARMED

A few taps on the glass caused the mouse to jump. Even this did not greatly concern the snakes. Finally one of our five rattlers that was about the largest opened his mouth as if in a yawn and slowly disentangled himself from the others and crawled slowly toward his victim. The mouse gave a few feeble starts as if puzzled, and then sat perfectly still, his eyes bulging. He seemed hypnotized. The snake crawled slowly forward. When about five inches away, the snake assumed a slight letter "S"

formation and struck without coiling. The strike was rapid but easily followed; the recoil was almost as rapid.

For an instant the mouse did not move. Then he seemed electrified. Terror stimulated him to a supreme effort. Around and around the case he went. With a mighty effort he ran up the corner of the case in a vain effort to get out. Slowly losing his footing, he sank back. A total of 32 seconds elapsed before he seemed to be taken with paralysis on the left side, and was shaken with convulsive spasms.

END OF LITTLE RODENT

The snake, in the meantime, seemed unconscious of the struggles of the mouse. But the helplessness of the mouse attracted his attention. With a quick grab, he caught the mouse back of the shoulders. He held this grasp for two minutes and 28 seconds. The mouse ceased all struggles almost instantly after the last strike. The snake then with great difficulty freed his fangs. After inspecting the mouse carefully it was grasped by the head. Slowly the muscles of the snake's head relaxed. By a series of gulps, interspersed with rests of about one-half minute, the mouse had disappeared, with the exception of the end of the tail. Then peristaltic contractions seemed to take place in the neck region. This was followed by the rapid and steady vanishing of the tail of the mouse.

A tragedy had taken place. But such tragedies are the expected in nature. Thousands of mice are killed by snakes, but few of these kills come under our observation.

Food Habits of Alligator Lizards

WILLIS KING

This summer as a special problem in connection with the Yosemite School of Field Natural History I made a special study of the Sierra alligator lizard (*Gerrhonotus palmeri*). I captured five of them at the Old Village at Camp 19 and at Mirror lake and caged them for observation. Their confinement was of such a nature that their reactions were as nearly normal as they could be in captivity.

After capture, the lizards were placed in their cage, without food for four days, to enable them to get acquainted with their new surroundings and to work up an appetite. A small tin of water was kept in the cage, but the lizards were never observed to drink. During the 15 days that they were in captivity they were fed five times, at three-day intervals. A check-up was made each time to determine the manner of taking the food, the sort preferred and the quantity.

Feeding No. 1—Lizard No. 1, adult female, devoured 20 immature grasshoppers, 11 katydids, seven shield-bugs and stink bugs and three spiders. Lizard No. 2, an adult male, took 13 grasshoppers, two Pentatomid nymphs, one damselfly, one spider, a yellow petal of St. Johnswort flower.

Feeding No. 2—No. 1 took 10 grasshoppers (a very large one was

taken head first). No. 2 took five grasshoppers. Shield-bugs were refused in this feeding, as were small brown ants.

Feeding No. 3—Large termites (*Termopsis nevadensis*) were the main article of diet. They were very eagerly taken by all lizards, once they became aware of the presence of the termites. No. 1 took 25 of the worker termites, one soldier termite, one centipede, one ant pupa. No. 3, a young male, took 10 of the worker termites and one soldier. Beetles and brown ants were refused. The other lizards took what termites remained. They would take them from tweezers held before them very readily, one after another.

Feeding No. 4—Consisted of large black carpenter ants and scarlet underwing moths. The ants were absolutely refused, and only lizard No. 1 ate a moth. This was caught and worked around until it was swallowed head first.

Feeding No. 5—Consisted almost entirely of mature grasshoppers about one inch long. All five of the alligator lizards ate readily, taking at least six grasshoppers apiece. In hunting, they move about rather jerkily, but not nearly as quickly as the swifts or whip-tailed lizards do in feeding. The insect is snapped quickly.

To complete our files of Nature Notes we need several more copies of the April issue of 1929. Should you have extra copies of this issue kindly send them to the Park Naturalist, Yosemite, California.



Cold Water-Loving Owls

B. A. THAXTER
Ranger-Naturalist

How wise is an owl? Can he distinguish between pure and impure water, or is he acquiring the cold drink habit during our July hot days? Or can it be that he is aping human tastes and is patronizing those fonts whose waters are coldest and sweetest? At any rate, whatever their drinking habits may be, a family of owls at Fern Spring recently have been furnishing Yosemite visitors a great deal of pleasure and an unusual opportunity to study a not commonly known bird.

On July 18, 1931, about 7:40 p. m., as the writer with a few friends stopped to get a drink at Fern Spring, near the Pohono bridge across the Merced river, his attention was attracted by a peculiar whining noise which he found was being made by two young spotted owls that had evidently also come down for a drink. The birds were quite fearless, allowing spectators to come within 10 or 15 feet of them. A nearer approach would cause them to flop to another perch, but they made no attempt to go away. When we stood back a little way from the spring they would fly down and stand in the edge of the water and drink.

ANOTHER MEMBER OF FAMILY

The next evening, July 19, at 7:30 p. m., we paid them another visit and we again found the two young

there eager to drink. This time they were accompanied by one of the parent owls. This third bird seemed shy and remained in the background. The other two, however, would come down as they did on the previous evening just as soon as the spectators fell back a few feet. On July 20 the two young birds were there again shortly after 7:15 p. m. This time they had a still larger audience of admirers, but they seemed not a whit disturbed by this fact. On the next three days they were seen there again just at dusk; but on the 22d and the 23d they were observed sitting in a nearby tree in mid-afternoon. Just how long the owls had been coming to this spring for their drink before they were noticed we do not know. Several evenings before the writer first saw them they were reported from the same spot.

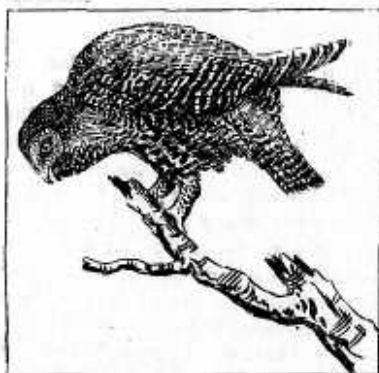
Fern Spring is one of the coldest as well as the purest springs known in Yosemite National Park. Evidently these owls are very particular about the kind of water they drink, for they have formed the habit of coming to the spring every night just at dusk and not going away until they have satisfied their thirst. Yet every night they have to undergo the annoyance caused them by dozens of people who also come there at that time for water. Right across the road, perhaps, 100 or 150 feet away,

is the Merced river, with shingly beaches, convenient rocks and plenty of places where these birds might drink unobserved and undisturbed. Yet they choose the better water in spite of the presence of people who flock to the place every evening for a cold drink.

RARE YOSEMITE VISITOR

The sight of a spotted owl (*Strix occidentalis*), according to both Grinnell and Dawson, is a rarity in this region. Being strictly nocturnal in habits, the birds are not often seen. Then we know very little of their home life. Nests that have been reported were found on the face of a perpendicular cliff at points from 15 to 200 feet up. Usually an old raven's nest lodged in a cranny of a cliff is the home site. They lay two or three white subspherical eggs and have one brood in March or April. The adult is about crow size, the female being slightly larger than the male. Its

size, the rounded appearance of the head, the absence of ear tufts, the lead-colored eyes, the brown plumage with numerous abruptly contrasted white spots in traverse rows, make it easy to distinguish it from any other of our owls.



SPOTTED OWL
Strix o occidentalis

HABITS OF CALLIOPE HUMMERS

CHARLES D. MICHAEL
Assistant Postmaster

Most of the species of our summer nesting birds, regardless of the weather, arrive in Yosemite Valley



Calliope
Hummingbird

according to calendar schedule. In other words, be it a light winter and an early spring, or a heavy winter and a late spring, the vast majority of summer visitors arrive in the valley sometime between the middle of April and the

first of May. There is one species, however, to prove the rule, as it were, that fails to observe the calendar schedule and travels on weather schedule. And strangely enough, the bird to break the rule is among the very smallest of all North American birds. This tiny bird is the calliope hummingbird.

The arrival of the calliope hummer in Yosemite Valley is coincident with the blooming of the manzanitas, which may be anywhere from the first week in March till the first week in May. Looking

over the records of the last 11 years I find that the arrival of calliope varies from March 2 to May 9. The May 9 record was after the heavy winter of 1921-22. The March 2 record followed the exceedingly mild February of 1924. Regarding the migrations of the calliope hummingbird it would appear that it is not a question of weather, nor is it a question of calendar schedule, but a question of food supply. This tiny hummingbird that winters in the mountains of Mexico seems to know when the manzanitas will be blooming in Yosemite Valley and makes his plans accordingly. This year he arrived March 21.

LONGEVITY QUESTIONED

How does calliope live? What set me to wondering is the fact that for eight consecutive years a male calliope hummingbird has appeared in early spring to take possession of a certain restricted territory, in which he claims a certain few twigs as his very own perching sites. His favorite perch is a dead twig that stands out of a ceanothus thicket. Here he is to be found day after day and year after year

during the months of March, April, May and June. Of course he does not stay on the perch all of the time. He must gather in his meals between times and also there are three other perches he visits occasionally.

Besides his little gnat-catching jaunts there are visits to the blooming manzanitas, where he may take both honey and insects. Also he must protect his territory from rival hummers and give some of his time to courting when female calliope arrives on the scene. He is a violent and demonstrative lover—a true lover who lives for love alone and who refuses to be bothered with such gross affairs as squealing children and the cares of a home. Male calliope takes no part in the labors of nest building, the laying of the eggs, or the care of the twin children. He is the male for but one reason.

But I have gotten away from my wondering. The point is: I like to believe that the same individual hummer has been coming to the same perch year after year, and yet how can such a tiny bird live so many years?

THE INDIFFERENT WOODPECKERS

ENID MICHAEL
Ranger-Naturalist

ACORN CROP SHORT—In the Kellogg oak groves, on the north side of the valley, the California woodpecker is by far the most common bird. There is a scanty crop of acorns on the Kellogg oaks

this year, and no crop at all on the *Chrysolepis* oaks. A few trees in the Kellogg oak groves bore a heavy crop this year, but many trees are almost barren and from all the fruiting trees acorns are falling before reaching maturity. And yet the California woodpeckers seem not the least concerned. They spend their days in social ways with no apparent concern for the future. One would think that they should be storing acorns now, but perhaps there is still plenty of time.



Rattlesnake Leads to Discovery of Quail Nest

Ranger-Naturalist P. J. White

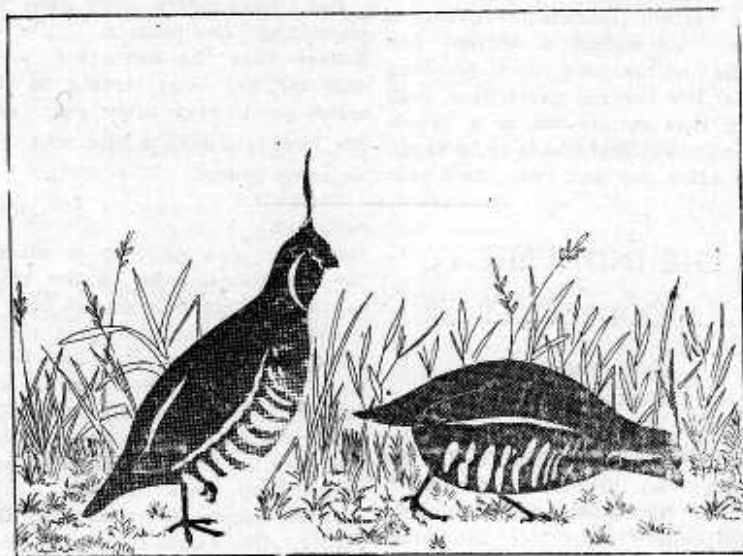
While scouting around the top of Eagle Peak off the trail June 26, the warning signal of a Pacific rattlesnake was heard. We immediately began a search which shortly led to the discovery of the snake coiled at the base of a rock under the thick foliage of ceanothus. Only a few inches away was the nest of a mountain quail containing eight eggs, but this we did not investigate until we had killed the snake.

The few rattlers that are seen in Yosemite are all less than three feet in length and this specimen was not an exception. The food

consists largely of rodents such as field mice and chipmunks which are swallowed entire. Doubtless the presence of the nest of eggs so close to the snake had no significance and was wholly accidental. As these snakes have been found at an elevation as high as 8100 feet, it was not unusual to see this one at an altitude of 7770.

The following week a party found the nest deserted and the eggs cold. Possibly the quail had been frightened away by the presence of the snake.

* * *



MOUNTAIN QUAIL
Oreortyx picta plumifera



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Dan Anderson