# YOJEMITE NATURE NOTES

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Dana Glacier

#### Yosemite Nature Notes

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## THE ICE CAVE OF DANA GLACIER By Ranger Naturalist Carl W. Sharsmith

Within the past few seasons an ice cave has developed in the Dana Glacier. A visit to this cave was one of the objectives during a naturalist conducted trip to the Dana Glacier from Tuolumne Meadows late in July, 1940, participated in by thirty-two enthusiastic and appreciative visitors. Situated on the right side as one came into view of the glacier, its external appearance seemed unpromising. Nevertheless, it permitted an intimate view of the interior of a alacier such as is seldom available to explorers of Yosemite icefields

The dimensions of the cave were about seventy-five feet in length, and about fifty feet in greatest width. On one side a low opening extended toward an unknown depth. The floor was of bed rock, which slanted upward from the entrance quite steeply until it met the ice roof at the back. The roof was thin in places, showing a pale blue translucence. One portion of the roof had spalled off like exfoliation sheets in massive granite, and great jagged chunks of clear ice littered the floor of the cave like talus blocks. These

spallings had been determined by horizontal compressional layers separating along "joint" planes. Although these layers were ten or more inches in thickness, they might have represented annual increment strata.

The most interesting feature, and that which made the cave quite remarkable, was the curiously fluted character of the sides and roof. It was evident at once that this fluted condition was due to the movement of the ice. In its passage over the bed rock, the bottom of the glacier conformed to the irregular shape of its bed. This shape was continued in the free portion now over-arching to form the walls and roof of the cave, the flutings retaining exactly the irregularities of the last rocks overridden. Thus the likeness of the walls and roof to some giant "pulled candy" was striking. ther demonstration of motion lay in some boulders embedded in the roof. Their bottoms were planed flush with the ice, and a trail of glacial flour adhered to the roof between the boulders and the bedrock several feet away. These were "faceted" boulders just fresh from the mill, but still in the grip of the ice.

The walls of the cave were narrowly banded horizontally, demonstrating the annual increment of snowfall, but the compact nature of the ice itself, as well as its peculiarly crystalline structure, was evidence of great pressures and stresses and repeated molecular rearrangements. It possessed all the characteristics of old glacier ice.

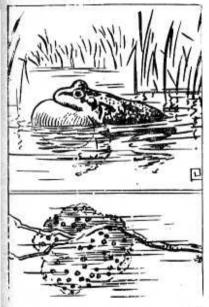
The Dana Glacier was easily to be reached from Tioga Pass by hiking up Glacier Canyon between the east face of Mount Dana and Dana Plateau, a distance of about four miles. There is no trail and the going in rough in places, but the reward for the geologically minded is abundant. The ice cave is one of the many features of this most accessible of the glaciers of the Yosemite High Sierra. The cave is, of course, subject to many alterations in form from that described above, so that its continued observation will be of considerable interest.

### LIFE CYCLE OF TOADS IN YOSEMITE VALLEY By Charles H. Martin

One of the first things I observed after starting my work at the Yosemite Museum the middle of April 1940, was the migration of two amphibians, the Pacific Tree-toad (Hyla reailla Baird and Girard) and the California Toad (Bufo boreas halophihis Baird and Girard) to the still meadow pools in Yosemite Valley. These pools were forming from high water in the Merced River and its tributaries, due to the meltina snow pack. The toads were commonly seen as they crossed highways and trails heading for these meadow pools. For several months they had been dormant in their hide-away, but now the snows were gone from the valley floor, and they were leaving their ground burrows, their cracks in rocks, and their places from under logs to go down to the meadows and mate.

The males of the species came first, and their songs were heard in all the meadows at night-even above the rushing river and the crashing waterfalls. There were constant chirping notes ringing from the throats of the little Tree-toads, and the throaty murmurs in lieu of sona from the California Toads. The females soon came and joined them the still pools and ditches became cluttered with the bodies of these amphibians, and the air vibrant with their songs. This symphony of the toads lasted through April and the first weeks of May-much later than in the lower altitudes of the state. Here, the season is almost a month later in starting as compared with those sections of the state which are lower and warmer. Mating was in process, and the female Tree-toad laid her fifty or so eggs in jelly-like

masses while the California Toad laid her approximately 10,000 eaas in long strings of jelly-like substance. Soon the egg laying was completed, and by the middle of May, I found the toads leaving the meadows for their retreats again. A few remained in the meadows, but kept so well hidden during the day that I knew they were there only by their songs at night. However, the large majority of the toads returned to the slopes and mountains, to gardens and to wooded areas, and to rocky streams to live their sheltered lives until next spring.



#### PACIFIC TREE TOAD (Hyla regilla) Vocal pouch and egg mass

Towards the end of May, the eggs hatched and the pools and streams were teeming with small larvae of tadpoles. The larvae of the Pacific

Tree-toad are a dark brown in color with heavily speckled black dots and an under surface of white, while the California Toad larvae are uniformly dull black with an under surface only slightly paler. I collected the first series of larvae about the first of June while they were sucking alage and humus from the sides and bottoms of the pools. Already the larvae of the Hyla regilla were much larger than those of the Bufo boreas halophilus, despite the greater size of the California Toad in the adult stages of these species. The metamorphosis is rapid, and several of those specimens taken had hind limbs developed. But the development of those animals must be rapid because by this time of year the excess supply of water flowing into the valley has been stopped. The pools, no longer being fed by the rivers and streams have begun to dry under the hot rays of the sun, and as these pools become smaller; there is a race between the hot sun and the larvae to determine whether or not the larvae will complete development before the pools go dry.

As early as June 7, I encountered a spot in the meadows southwest of the Old Village which proved to be a death trap for thousands of larvae of the California Toad. As late as the last of May, this area had been filled with swampy pools, but when it started drying the water rapidly vanished, and at least 5,000 larvae were baked to

death in an area 4 feet by 6 feet, as the water in their pool seeped away. By the first weeks of July, I noticed quite a few toads that had completed their development, and as I walked through the meadows they jumped through the grass or into the water. On July 11, another visit to the meadows southwest of the Old Village showed that the pools here were drying rapidly, and everywhere damp, muddy spots with the bodies of thousands of larvae in them. Only one pool remained at the base of a huge boulder, and in this water the larvae were so crowded that the pool was literally black with them; half of them dead and the other half dying. One could easily see that all the waters in these meadows would be gone before the life within it had developed enough to live out of the water.

However, the picture was not so dark for those larvae living in the pools north of the Old Village, for here the pools were deeper and lasted longer, and over half of the amphibians in them were able to complete their metamorphosis before the pools were completely dry. When I visited the meadows on the sixteenth of August there was no water in evidence. Streams were dry, and the pools held water only in their muddy bottoms. But in these damper places were hundreds of young toads, largely Pacific Tree-toads, as many as six

to the square foot, that had won the race against the sun. A collection was made of the various stages in the development of both of these toads, which is now in the museum's alcoholic collection

So it is that the pools and streams in the meadows which once nursed hundreds of thousands of amphibian larvae are now gone. but before they dried up they were able to give life to enough toads to perpetuate their species. It is therefore quite evident why toads lay so many eggs. It is necessary for millions of young to be started in order that a few will survive to reproduce their species. After another winter of snow and rains these pools will again be filled and the process of housing and destruction of larvae will again be repeated. Thus nature gives life and takes it away, but always there is life.

## NATURE NOTELETS By Ranger-Naturalist Mowbray

On July 8, 1940, I found a dead Rubber Boa on the Big Oak Flat Road a short distance above the long tunnel. The length which this species attains is usually less than 24 inches, but this particular specimen measured 28 inches in length and was probably longer before killed as a part of the head was missing.

#### A NEW RODENT FOR YOSEMITE NATIONAL PARK By Ranger Naturalist Vincent Mowbray

The Gilbert White-footed Mouse (Peromyscus truei gilberti) has been suspected of occurring within the boundaries of Yosemite National Park, but it was not until this year that any specimens were obtained to uphold this suspicion. On July 6, 1940, two of these mice were captured at Miguel Meadows, elevation 5200 ft., by David Dunn and Bob Stebbins both members of the Yosemite School of Field Natural History. One of these specimens, a female, is apparently a young individual as it has the blue-gray coloration to the pelage which is typical of a juvenile animal. The other specimen is an adult though small male. The next record for this species in the park is of three specimens obtained by the writer on September 19, 1940. These last three specimens were obtained near the All-Year-Highway to Merced, about 100 yards within the boundary of Yosemite National Park. Twenty-five traps were set out on a dry hillside near the highway, and the total catch was three mice. The elevation at this point is about 2400 feet. All three of these individuals were adult and in breeding condition. The female contained three well-developed embryos, and the testes of the two males were descended and much enlarged. In Grinnell and Storer, "Animal Life in the Yosemite" they say, "The breeding season of this mouse is not known with any certainty . . . " These meager data point to a breeding season three months in extent (May to July),, with the probability that it is of somewhat longer duration. The capture of these three individuals on September 19, all of them in breeding condition would seem to indicate that the breeding season of this mouse extends well on into the fall.

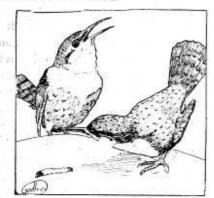
The following chart shows the measurements in millimeters of this mouse as given by Grinnell and Storer and also the measurements of the five specimens in hand. One of the last three captured had lost at least half of its tail prior to its capture so total length and tail measurements were not possible.

Total Day Cont

	11.57 (1) 5	Total	700000000000000000000000000000000000000	Hind Foot	
Grinnell and Storer Measurements		182-221	94-111	23-25	20-26
1.	Miguel Mdws. Juv. Fe	192	95	22	23
	Miguel Mdws. Ad. M	200	100	19	25
3.	El Portal Ad. Fe	205	108	24	21
4.	El Portal Ad. M	195	103	24	22
5.	El Portal Ad. M	?	?	23	22

## THE DOTTED CANYON WREN COMES BACK By Ranger Naturalist Enid Michael

The Dotted Canyon Wren, once a common bird in all the rock slides about Yosemite Valley has been strangely rare these last several years, and it is a pleasure therefore to report a slight but apparent increase in the number of birds this season. In three different sections of the valley, Canyon Wrens have been seen and heard. So late in the season as July 29, three different individuals were heard in song: one bird at Rocky Point, one bird on the talus heap at the foot of the Royal Arches, and a third bird on the rock slide back of Camp 19. There is the hope that Canyon Wrens may once more become permanent residents in Yosemite Valley.



The Canyon Wren is one of our sweetest singers and better still so unique is its song that when once heard it is not likely to be forgotten, or to be confused with the song of any other bird. His song comes tumbling down the scale like the bubbling voice of an eager brook that joyously bounds down hill.

Because of its peculiar feeding

habits the Canyon Wren has no competition along the forage lanes, and because of these habits, it may enjoy a prosperous winter in the Yosemite Valley even in seasons of heavy snow. In the dark caverns among the great boulders that are piled at the base of the cliffs the Canyon Wrens find their food and even in winters of heavy snow the forage lanes among the boulders are still accessible to the wrens.

#### CASSIN'S VIREO FEEDS COWBIRD By Park Naturalist C. A. Harwell

On June 25, 1940, while conducting the Yosemite School of Field Natural History on a field trip, we saw an immature Dwarf Cowbird near the shore of Mirror Lake. The young of this species in Yosemite Valley is worthy of observation, so we watched to see what would happen. The young bird was walking about under an Oak picking at food on the ground. It seemed to pay little attention to our close approach. Soon a male Cassin's Vireo approached to within 10 feet of the Cowbird, and seemed quite alarmed about the audience situation. Finally by call notes and song fragments the Vireo succeeded in attracting the young bird to the lower limbs of an Oak, then the parent Vireo led the Cowbird in a 40-foot flight to another Oak, where the monstrous looking young was fed by both male and female Cassin's Vireos. The nature of the food was not seen.

## FIREFALL FROM HALF DOME By Ranger Naturalist Russell L. Lewis

In the early days of white man in Yosemite Valley the now world lamous Half Dome was known as one mountain that would never be climbed by man. Since the first ascent in 1875, there have been literally thousands of Yosemite visitors who have scaled the granite dome. On Saturday evening, August 17, Ranger Naturalist Ernie Payne and I had one hundred ten people at a camplire program at the very top of Half Dome. We had left Happy Isles (Pleasant Point as one lady insisted on calling it) at noon, and the last of our party arrived at the summit by eight in the evening.

The party included a lady from Holland, youngsters only nine years old, and other visitors from all parts of the United States. The lady from across the Atlantic reminded us of the hostilities over there and of our great fortune in being able to enjoy both the freedom and beauties of our great National Parks. It reminded us, too, of the generous and foresighted individuals who originated and developed this "idea" of a National Park where all people may enjoy the beauties of nature.

As there is little vegetation on the dome, it was necessary for each of us to carry up a stick for the campfire. The unique place for a campfire and the spectacular view of Firefall were only two of the features of the evening for friends in many places saw us on Half Dome and made their identity known by signalling with flashlights.

Ranger Naturalist Heil and his party of seven-day hikers signalled to us from a little dome near the May Lake High Sierra Camp which is nearly eight airline miles away. The operators of the slide projectors at the Ahwahnee Hotel and at Camp 14 turned their lights so as to signal to us. Mrs. Payne and Mrs. Lewis signalled to us from the Wawona Tunnel which is also nearly eight miles away. We could see the blinking flashlights of the people who were at Glacier Point. Finally, another hiking party had a campfire on top of Cloud's Rest.



After our party was satisfied with the views of firefall, light signals from friends on distant peaks, and the achievement of having climbed a world-famous dome, we started the treck back to Yosemite Valley in the light of full moon. Although some of the weary hikers plodded on until the early hours of Sunday morning, none apparently regretted the inspirational but tough climb.

#### WHITE-FLOWERED RED HEATHER Ranger Naturalist C. W. Sharsmith

The Red Heather (Bryanthus breweri Gray) is so named because of its red or deep pink flowers. In a little valley at the north base of



Triple Divide Peak above Washburn Lake, members of the 1940 Yosemite School of Field Natural History found a patch of this heather several yards in extent which possessed pure white flowers. Surrounding this locality were acres of the normal red form. Such a case of albinism in a normally colored flower, while not unusual in nature, is apparently infrequent in this Red Heather. This appears to be the first

time that white flowered Red Heather has been observed in Yosemite National Park. Collected specimens turned from white to faintly pink on pressing and drying. They have been placed in the herbarium of the Yosemite Museum.

## NATURE NOTELET By Ranger Naturalist G. A. Petrides

The second and third specimens of the Golden Long-eared Bat (Myotis evotis chrysonotus I. A. Allen) ever to be recorded in Yosemite National Park, to the best of the author's knowledge, were captured in the museum building on August 3 and September 14, 1940. Like the first specimen taken on June 27, 1927, the second animal captured was an adult female. Concentrations of vascular tissue in the right horn of the uterus seemed to indicate the birth of two young earlier in the summer. The third individual was probably an immature male, as judged from the small size of the testes and the condition of the skull and teeth.

The large ears and golden fur of this species make it easy of identification, but like many other species of bals, little is known of its habits or even its distribution within the park. However, this species is undoubtedly of moderately common occurrence in the Yosemite region despite the failure of Grinnell and Storer to mention it in their "Animal Life of Yosemite," published in 1924. Further data in regard to all species of Yosemite bats are badly needed.

