

YOSEMITE NATURE NOTES



Volume IV

April, 1925

Number 4

A PERSONAL INVITATION.

YOSEMITE NATIONAL PARK IS YOURS! WE OF THE NATIONAL PARK SERVICE WANT TO HELP YOU TO MAKE FRIENDS WITH YOUR PARK AND TO UNDERSTAND IT IN ITS EVERY MOOD. ALL OF THE FOLLOWING SERVICE IS OFFERED TO YOU *free* BY YOUR GOVERNMENT:

Visit the Yosemite Museum!

Here you will learn the full story of the Park — what tools were used by the great Sculptor in carving this mighty granite-walled gorge; who lived here before the white man came; how the Days of Gold led to Yosemite's discovery; how the pioneers prepared the way for you; and how the birds and mammals and trees and flowers live together in congenial communities waiting to make your acquaintance.

Plan your trail trips on the large scale models in the Geography Room.

The Yosemite Library in the museum provides references on all phases of Yosemite history and natural history.

Popular lectures on Yosemite geology and other branches of natural history are given by nature guides at scheduled times each day.

The nature guide on duty will be more than willing to answer your questions on any subject.

Go Afield with a Nature Guide!

Take advantage of this free service that will help you to know your Park. A competent scientist will conduct you over Yosemite trails, and from him you may learn first hand of the native flowers, trees, birds, mammals, and geological features.

See Schedule of Nature Guide Field Trips.

Visit Glacier Point Lookout!

From there you will obtain an unexcelled view of Yosemite's High Sierra. The binocular telescope will bring Mt. Lyell to within one third of a mile from where you stand; you can recognize friends climbing trails several miles away. The Nature Guide in attendance will help you to operate it and will explain what you see.

A small library is at your command.

You will enjoy the informal nightly campfire talks given here.

Attend the Nature Guide Campfire Talks!

In addition to the museum lectures members of the educational staff give talks as a part of the evening program at Camp Curry and Yosemite Lodge. Non-technical explanations of how Yosemite came to be; what you may expect of Yosemite bears; how the local Indians lived; what birds you see about your camps; what trout you will catch in Yosemite waters; how you may best visit the wonderland of the summit region; and scores of similar subjects are given by the National Park Service Nature Guides.

ALL OF THESE OPPORTUNITIES ARE PROVIDED FREE OF CHARGE BY YOUR GOVERNMENT.

—TAKE ADVANTAGE OF THEM—



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OPENING NEW YOSEMITE WONDERS.

By C.P. RUSSELL

Park Naturalist, Yosemite National Park

The National Park Service feels that the opening of the wild back country of Yosemite is a development of the greatest importance. Each year 100,000 or so persons visit Yosemite. All but a few hundred of these visitors carry away with them the idea that Yosemite Valley is Yosemite National Park—only a few hundred of the thousands leave the valley floor to visit the wonderland above the "rim." Yosemite Valley comprises but a few square miles of the 1925 square miles within the Park, and above this much frequented spot are wonders undreamed of by the average tourist. Up to the present it has been impossible for the vacationist of moderate means to go back on these High Country trails. The only way open was to spend hundreds of dollars in renting equipment, pack animals, and hiring a guide. Now a remarkable thing has happened. Camps have been placed in well chosen spots throughout the summit region of Yosemite. One may now start afoot for a week, two weeks or a month's outing with no more thought of preparation than were the trip to Glacier Point and back the same way. At the end of each day's hike a warm bed and good food may be had at prices pleasingly low. From these Hiker's Camps one may visit a great part of the northeastern section

of Yosemite.

Please do not misunderstand me. The Government is not operating the camps, but the National Park Service is so thoroughly behind the new development that we feel we can not over-emphasize the desirability of acquainting everyone with the possibilities. From a financial standpoint the Camps mean nothing to me. I am telling you about this purely that you may be aware of the privilege that is yours.

Many readers have visited Yosemite and have some conception of the marvels that are preserved there. For the benefit of those who have never been in the park I will give a brief description of it that the importance of this new Hikers' Camp development may be clear to everyone.

Yosemite National Park lies directly east of Oakland. Within its boundaries are contained the most spectacular and awe-inspiring features of the Sierra Nevada Range. The eastern boundary of the park lies upon the very summit of the Sierras, ten to thirteen thousand feet above sea level. The western boundary is about 4500 feet above sea level. Motorists in approaching the park drive up the long incline made by the mountains and enter the preserve from the west by the Big Oak Flat Road, or by the Wa-

wona Road which enters from the south. The majority of the thousands who drive into Yosemite go directly to that part of the world-famed gorge of the Merced River known as Yosemite Valley, and there they remain until their time is up and they must drive up and out of the great cleft and down again through the foothills to the San Joaquin. Those tourists who come in by the Yosemite Valley railroad experience much the same thing. From Merced to El Portal they ascend gradually, always following the canyon cut by the Merced River. At El Portal they board a great motor bus and enjoy a most beautiful fourteen mile ride—still in the Canyon—to Yosemite Valley. There they find accommodations according to their tastes. They may take the "Valley Tour," perhaps make one climb up the 3000 foot cliffs and then return to the low-lands secure in the belief that they have seen Yosemite National Park.

This tourist's routine has been so firmly established that we must shout to be heard when we announce that Yosemite Valley is not all of Yosemite National Park.

Back Country Attractive

Comparatively few tourists have discovered that there is a very good auto road upon which they may traverse the Park, cross the Sierras and descend to that most interesting region about Mono Lake. Those do make that trip over the Tioga Road are assured of a good conception of the varied beauties of Yosemite. Park officials are pleased at the increasing popularity of this high-country highway, for every individual that journeys over it persuades others to believe that there is more to Yosemite National Park than Yosemite Valley.

But there is another way to escape the crowds that throng the valley floor! A year or so ago the concessionaries of Yosemite unselfishly expended a considerable amount in an experiment with high-country camps, the idea being to provide accomoda-

tions far from the beaten paths at a price so low that any and all vacationists might take advantage of them. Before the event of these remarkable facilities any lover of the wilds who desired to leave the crowd behind found it necessary to pack his equipment with him. There are few who like John Muir can start on an extended trip into mountain fastnesses with but a blanket and a small sack of bread and tea. And there are not many with sufficient strength and enthusiasm to pack upon their own backs all of the paraphernalia necessary to the success of a high mountain trip. In the past most such excursions have been made with pack outfits. This has involved employing a guide and packer, renting saddle and pack animals, and renting elaborate equipment which goes with such an expedition. There is nothing finer than the sensation of complete independence which the adventuring tourist, so equipped, feels. But the several hundred dollars that it costs to so journey, for even a week, has been a barrier to the great majority who love the mountain tops.

Hikers Camps

The establishment of Hikers camps makes it possible to enjoy the very best that the Sierras have to offer and it costs no more to use them than it does to live at home. You may start on a week's or a month's outing with no more thought of preparation than were the trip to be a climb to some point on the valley's "rim" and back the same day. If you can enjoy hiking ten miles a day through the amazing beauty of the High Sierra, merely carry a sweater and tie a lunch to your belt and go. At the end of each day's pleasure there will be awaiting you a piping hot meal and a bed.

The first unit in the series of camps is located in Little Yosemite Valley. Leaving the Yosemite Valley at Happy Isles, hikers will climb the gigantic steps over which pour Vernal and Nevada Falls. 33 feet above Yosemite

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THE GOLDEN EAGLE AS A DEER ENEMY



The fawns kept almost under the mother's belly as she ushered them into a thicket of brush.

By D. D. McLEAN
Assistant Naturalist, Yosemite
National Park

Golden eagles have often been accused of many crimes that it is doubtful they were guilty of committing. The birds may kill a few domestic animals now and then, but should they be condemned for that alone when the damage thus done is far overbalanced by the number of squirrels and jack rabbits they devour? Among our deer, however, the damage done is perhaps greater than we realize. What animal could be considered finer for a report than a few weeks old fawn?

On one occasion, several years ago, another young man and myself were fishing on the Tuolumne river near its junction with the South Fork and routed a golden eagle from his dinner on a freshly killed mule deer fawn which was apparently about two weeks old. The fawn had been grasped by the back, the talons having been forced through into its vitals. It had then floundered about over a space perhaps ten feet across until finally killed by the death-dealing grip of the powerful bird.

The eagle had opened a hole in the right side of the fawn and had been devouring the liver and lungs. The nose was clogged with blood, so evidently the eagle's talons had ruptured the respiratory organs.

The fawn was in excellent condition before its death, but the mother was nowhere in sight at the time.

Another time while my father was riding along the top of Mt. Bullion near Mariposa he saw two golden eagles in hot pursuit of two fawns, accompanied by the doe. The eagles would swoop down to within a few feet, with legs stretched out and feet spread, but the fawns kept almost under the mother's belly as she ushered them into a thicket of brush.

Another time I found a fawn that had apparently been killed by an eagle, as the whole situation was similar to the first mentioned case. One golden eagle killed near Kinley had just eaten a considerable amount of deer meat, hence another case. On Pilot Peak ridge where the deer are very abundant the eagles are also numerous. It is not uncommon to see three or four while traveling along only a few miles of the ridge. Generally they are slowly circling over the slopes, apparently searching for quarry. Since ground squirrels are practically wanting, as well as rabbits, the only large supply of food left is deer.

Of course the only deer killed to any extent are small fawns, but even at that they are the future does and bucks that are the spirit of the wild in the Yosemite region.

WHEN CHINESE CAMP WAS BOOMING



The cradle or rocker was employed by the Chinese long after white miners progressed to more efficient methods.—From "The Golden State" by R. Guy McClellan, San Francisco, 1872.

BY C. P. RUSSELL

Park Naturalist, Yosemite National Park

While Yosemite was never a part of California's "gold region," yet the history of the park is so related to the early activities in the Mother Lode country that relics of the days of '49 find a place in the Yosemite Museum. Our historical exhibits tell in impressive manner of how the gold seekers pushed up the Merced river almost to the very gates of the famed valley, but failed to make its discovery until they came in search of red-skinned depredators who resided within it. A little more than a year after the discovery miners actually extended their prospecting to include the magnificent gorge, Yosemite Valley, and it was the murder within its walls of two miners by Yosemite Indians that resulted, indirectly, in the opening of the way to men other than miners and soldiers. The mining tools and

implements of the romantic days of the early fifties did, indeed, play a part in the development of Yosemite.

In the first years of mad excitement that brought miners swarming to the regions just below Yosemite, the precious metal was searched for on or near the surface of the earth in deposits designated by the miners as "river diggings," "gulch diggings," "bar diggings," "flat diggings," "bench diggings" or "hill diggings," according to their topographical positions. These shallow deposits owed their origin to ancient activities of the mountain streams, working through the ages, which had washed away enormous areas of the mountain sides. The contained gold of this washed earth, being heavier than the other materials, was left in concentrated form, and in spots quite accessible to the miner.

Indeed, so accessible was some of it that no more complicated a pro-

cess was required than the mere picking out of the grains from the rock crevices in which they had lodged. This was done with the aid of a knife, and there was developed as a result what was known as a crevice knife. In Thornton's "Oregon and California in 1845" there is quoted an anonymous letter describing a trip of inspection made to the new gold fields by Colonel Mason, acting Governor of California. Their attention was called to a man "picking out the gold," and the party turned aside to watch. "He was picking out of the crevice in the slate, across which the water had pitched in winter to a bed some feet below, the gold and earth in lumps, and had his left hand full when I saw him. I mean he was picking it out of an open hole in the rock, as fast as you can pick kernels out of a lot of well cracked shell-barks."

"By the Great Horn Spoon"

The presence of fine grains, "gold dust," in river sands and in the soil of ancient river beds was frequently determined by the most cursory examination of likely alluvial deposits. But to determine with some degree of certainty the richness of the deposit, the horn spoon method was evolved. The horn spoon is made from a split horn of an ox. This half-a-horn, scraped thin, formed a curved spoon from one to two inches deep, two to three inches wide, and six to ten inches long. It was used only in testing the gold content of gravel or pulverized rock, by washing small quantities of the material in it at a time. So crude an instrument hardly seems qualified for such use, but we are assured by contemporary writers that experienced prospectors estimated the probable yield of a mass of auriferous gravel with surprising accuracy with the horn spoon. The Yosemite Museum possesses a specimen of this original, which gave rise to the expression, "By the great horn spoon," used in the diggings along the Merced just below Yosemite. E. L. Guthrie was the donor.

The simplest method of obtaining gold from the sands, gravel or pulverized rock was the panning process. The miner's pan evolved through California experience, is made of the best quality of Russian iron, either stamped out of a single sheet or made from several pieces which were joined by a cold-jointing process. The rim was strengthened by an iron wire rolled in. Solder was not used, and mercury, which was sometimes placed in the pan to take up the gold, did not attack the pan itself. Gold pans resembled ordinary circular dairy pans except that the sides were more flaring. They were usually ten inches across the bottom, sixteen inches at the rim, and slightly more than two inches deep. In our collections are pans used during the activity in the Tioga region during the seventies and some that date back to the days of '49 and the Mother Lode. Walter McLean of Coulterville has donated these last

relics, which, by the way, were employed by his ancestors on the spot on which he now resides.

How the Gold Was Panned

The pick and shovel also played an important part in panning gold. The shovel of the '49er, by the way, is quite distinctive and reminiscent of the romantic days as is the gold pan.

The pan was first filled with the auriferous earth and then taken to a stream, puddle or tub of water and submerged. If the material was clayey in texture, it was worked over with the hands until it became disintegrated. One side of the pan was then held a little higher than the other and with a circular motion of the hands a revolving current was produced within it. The lighter portions of the washed material was so carried over the rim, and the heavier matter remained behind. Pebbles were removed by hand and at last nothing remained but gold, either clean or mixed with heavy sand. The residue was either saved until more accumulated and then further washed, or perhaps the heavy black sand could be removed with a magnet. In either case the "dust" was bagged in a small buckskin sack and often served as legal tender. Sometimes mercury was added to the residue in the pan, and the resulting amalgam saved until a quantity had accumulated, when it was purified.

The slow panning method did not long suffice to meet the demands of the eager fortune seekers, and it was rapidly replaced by winnowing, the cradle or rocker, the long tom, and finally by the sluice. The pan was relegated to mere prospecting purposes, or to "cleaning up" of sluices.

Probably the winnowing process found no extensive use, but it is declared by some "old timers" to have been employed in dry seasons when water was wanting. The pay dirt was placed upon a blanket and "dry washed," the method by which seeds are winnowed from the chaff being imitated.

The Rocker and the Long Tom

It is said that the rocker was brought to California from Chile. It is a simple mechanical contrivance resembling in shape and size a child's cradle. The dirt was thrown into an upper compartment, which has a screened bottom. The combined action of a rocking motion aided by water caused the finer and heavier particles to be washed through to a lower compartment, where further separation was accomplished by riffles upon the bottom of the rocker. Mercury was often placed in the riffles to take up the gold. Earthy materials passed through the rocker with the flow of water. The upper compartment was removable, and the washed, coarser materials were dumper out by hand. The Chinese adhered to this primitive contrivance long after the white miners adopted more advanced methods. Specimens of rockers used in the

Yosemite region have been donated to the museum by J. R. McCready of Mariposa and Paul Morris of Merced.

After the rocker came the long tom. It was extensively used until 1854 and 1855 when it in turn was abandoned to the Chinese in favor of a further improved method. The long tom was especially suited for work in gulches, where a stream of water could be kept flowing through it. It consisted of a wooden trough about twelve feet long, eighteen inches wide at the upper end and widened to thirty inches at the lower end, with sides eight inches high. At the lower end was a false bottom of sheet iron, perforated with half-inch holes. This sheet iron was so turned up at the lower end that the water could not run over the edge but poured through the holes to a riffle box below, which was fitted with transverse riffle bars. The gold-bearing earth was shoveled in at the upper end and washed down to the perforated false bottom, where the gold and finer materials would pour through the holes. In the box below the gold would lodge behind the riffle bars, and the running water would gradually eliminate much of the sand. Sometimes mercury was placed behind the transverse cleats to take up the gold. The long tom was in its day the most efficient implement known to the miners, but as the difficulties of securing the gold increased, Yankee genius found a way to maintain production.

The sluice was invented. It was made up of a series of troughs fitted end to end. Each trough was made from rough pine boards and was about twelve feet long, twelve

inches deep, fifteen to twenty inches wide, and open at the ends. They were three or four inches narrower at one end than at the other so that the narrow end of one might be fitted into the wide end of another and so make a continuous sluice of any desired length. They were sometimes two or three hundred and, in hydraulic mining, even a thousand feet long. The whole was set to an even grade so that the fall in the length of each box was from ten to eighteen inches, depending upon the character of the material to be washed. Across the bottom of each box was placed a number of cleats or riffles. Many tons of auriferous gravel was shoveled into the sluices and to avoid the destruction of the riffles and bottom by the tumbling, water-propelled stones, longitudinal slats were put in, so spaced as to carry the coarse gravel and stones smoothly down the incline, but the gold and finer materials were permitted to reach the bottom. The riffles were usually charged with quick silver, and sometimes washing was continued day and night for weeks before a "clean up" was made. When the occasion for collecting the gold arrived, no more dirt was shoveled into the sluice. The water was allowed to pour through it until it was clear as it passed from the lower end, when it was shut off. The riffles were then taken up, and the gold and mercury collected. When all the amalgam was collected, it was washed clean in a pan, and then strained through buckskin or canvas, which allowed the free mercury to pass while the solid amalgam was retained to be later purified.

FROM THE NATIONAL CONFERENCE ON OUT-DOOR RECREATION

Called by PRESIDENT COOLIDGE

"THAT THE CONFERENCE ENDORSE NATURE STUDY IN SCHOOLS AND THE EXTENSION OF THE NATURE STUDY IDEA TO EVERY AMERICAN SCHOOL AND FAMILY; . . . THAT THE ESTABLISHMENT OF MUSEUMS OF NATURAL HISTORY IN NATIONAL PARKS WILL INCREASE THE EDUCATIONAL RECREATIONAL VALUE OF THE PARKS".—*Resolution of the Conference.*

"WATER DOGS" ARE BREEDING

PACIFIC Newts or "water dogs" are of such retiring habits that but few Yosemite visitors observe them. Occasionally, however, a tourist seeks information at the Yosemite museum on the "red lizard" seen crawling slowly through wet leaves or some moist locality at the lower end of the valley.

The animal is lizard-like in form, but quite unlike a lizard in that its skin is moist and scaleless. If one is picked up, this fact becomes very apparent. It is cold and clammy to the touch and decidedly more like a frog than like a lizard. Its movements are always slow, and again in that respect it is not like a lizard. But because it has a tail that persists through life, many people cannot recognize its relationship to frogs and toads.

At the present time (April 29) newts may be found in pools of water as well as in moist localities on land. Whether they habitually resort to pools for the winter or enter the pools in the spring is not easily determined. However, as the particular pools in which they are to be found now did not exist last winter, it is evident that in this instance they have just crawled to the water. I have found them in Yosemite on land under moist leaves in late November and it is possible that in this locality newts do not enter the water until spring.

Like frogs these salamanders deposit eggs in the water. The egg masses containing about twenty eggs, are transparent, gelatinous globules about one inch in diameter.

They are fastened to submerged vegetation, and there the tadpoles hatch. The time required for hatching depends upon temperature conditions. The Yosemite pools at present under observation will be treated with oil to kill mosquito larvae, and it is doubtful if the salamander larvae will fare better than the mosquito "wigglers." If the tadpoles do develop, they will live in the water for a number of weeks. Like other amphibians, they are equipped with gills, which disappear as the transformation that prepares them for life on land takes place. Unlike the tadpoles of frogs and toads, however, they will keep their tails through life—and men will continue to call them "lizards."

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Communications should be addressed to C.P. Russell, Park Naturalist, Yosemite National Park.

HIKERS CAMPS [*Contd. from Page 26.*]

Valley, and just above Nevada Falls, is the beautiful three-mile basin, Little Yosemite. Surrounded by granite domes and precipitous slopes, the camp here is situated most pleasantly against the north wall of the Valley at a point where Sunrise Creek cascades with unceasing music upon the Valley floor. There is much within Little Yosemite to interest the visitor, and that part of the day not consumed in making the easy climb from Happy Isles can be spent in exploring the park-like valley.

The second day's hike takes one up and out of Little Yosemite and onto high, open granite from where superb views of the nearby peaks may be had. The hiker is tempted to long remain here where every vantage point seems more delightful than the last. But to reach the next camp one must descend from this region of unbroken views to the river, which here roars through a succession of rapids and cascades. Not far above is beautiful Merced Lake and a most elaborate camp, which circumstances have made available to hikers. Fishing is excellent in Merced Lake and Washburn Lake which is a few miles above. Unless one is very time-poor, an extended stop will be made at Merced Lake.

The third camp is located on the very back bone of the Cathedral Range, two miles closer to heaven than is San Francisco. On the heather-bordered, cliff enclosed, Boothe Lake is the highest of all the Hikers Camps. The country adjacent to this camp is unexplored and will offer inducements to the most adventurous hikers.

I haven't space to describe more of the camps. I will only mention that one of them is on Mount Lyell, just under the living Lye! Glacier; another

is at Tuolumne Meadows—in the heart of a wonderland that requires months to explore; a sixth is in the canyon of the Tuolumne River close to the world-famed water wheel Falls; and a seventh at Tenaya Lake amid the most beautiful glacier monuments.

In the words of John Muir, there is now accessible to all with strength to walk:

"The most songful streams in the world; innumerable lakes and waterfalls and smooth silky lawns; the noblest forest, the loftiest granite domes, the deepest ice-sculptured canyons, the brightest crystalline pavements, and snowy mountains soaring into the sky twelve and thirteen thousand feet . . . gardens on their sunny brows, avalanches thundering down their long white slopes, cataracts roaring gray and foaming in the crooked rugged gorges, and glaciers in their shadowy recesses, working in silence, slowly completing their sculptures; new-born lakes at their feet blue and green, free or encumbered with drifting icebergs like miniature Arctic Oceans, shining, sparkling, calm as stars."

Understand, a guide is not necessary in traveling between these Hikers Camps. The trails are well marked and it is perfectly safe for any one to venture upon them alone. However, the Yosemite Nature Guide will conduct parties in the high-country each week and if you would like to make the trip with a naturalist who will explain what is seen it is only necessary to plan to start at the time that the Nature Guide trip is scheduled. This is a free guide service provided by the government. We can accommodate but twenty each trip, so reservations should be made at the Yosemite Museum.

THE YOSEMITE NATURAL HISTORY ASSOCIATION ITS PURPOSES

- To gather and disseminate information on the wild-life of the Sierras.
- To aid the Yosemite Museum in telling Yosemite's story.
- To promote the educational work of the Yosemite Nature Guide Service.
- To publish (in co-operation with the U. S. National Park Service) "Yosemite Nature Notes".
- To study living conditions, past and present, of the Indians of the Yosemite region.
- To maintain in Yosemite Valley a library of historical, scientific, and popular interest.
- To further scientific investigation along lines of greatest popular interest and to publish, from time to time, bulletins of non-technical nature.
- 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.

MAY WE SEND YOU EACH ISSUE OF YOSEMITE NATURE NOTES?

Your check for \$2.00 sent to the Park Naturalist, Yosemite National Park, will help to pay the cost of its publication for one year and make you a member of the Yosemite Natural History Association for the same period.

KEEP IN TOUCH WITH YOUR YOSEMITE.

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Dan Anderson