YOSEMITE NATURE NOTES

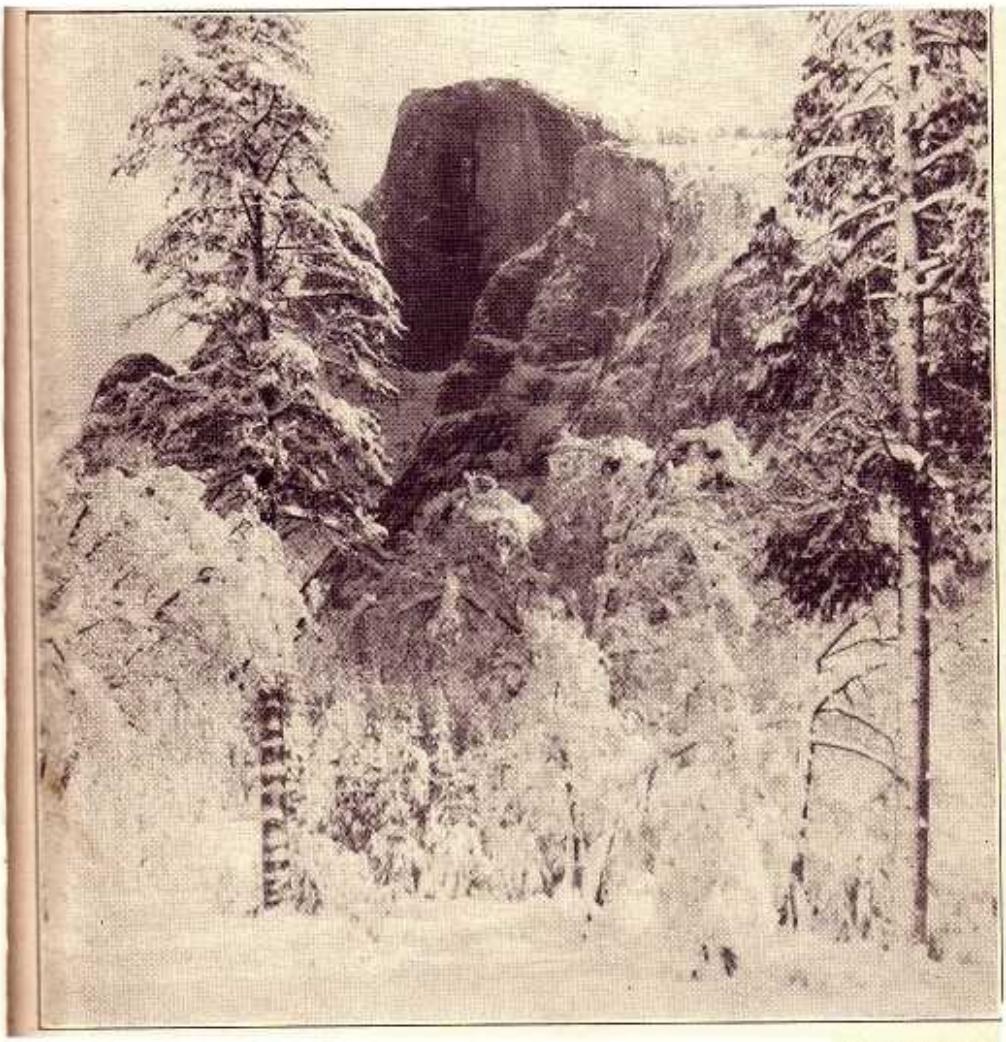

Photo by Anderson

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Yosemite Nature Notes

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C. P. Russell, Superintendent — D. E. McHenry, Park Naturalist
H. C. Parker, Assoc. Park Naturalist — R. N. McIntyre, Asst. Park Naturalist

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GOLD DISCOVERY IN CALIFORNIA

By Ralph Anderson, Administrative Assistant

During these Centennial years in California, 1948 gold discovery, 1949 the gold rush, and 1950—statehood, it is especially interesting to look back through the pages of colorful history of this State.

Not long ago while driving on Highway 99 north of San Fernando, I stopped at a historic marker which read as follows:

6 MILES

OAK OF THE GOLDEN DREAM

In Placeritas Canyon, March 1842, Francisco Lopez y Arballo, while gathering wild onions from around an old oak, discovered gold particles clinging to the roots of the bulbs. It is estimated that $80,000 in gold was recovered as a result of this discovery.

Historical Landmark 160

Intrigued by the fascinating story, I took the short drive to Placeritas Canyon. The road wound through a most picturesque section where horse and cattle ranches now appear must as they must have for the past century or more. It is largely untouched by the inroads of civilization so apparent along Highway 99.

On the way up the sycamore-bordered canyon I was stopped by a motion picture outfit which was busily filming scenes for a typical western feature. It was an ideal spot they chose for a background for galloping stage horses, pursuing bandits, colorful cowboy regalia.

Historical Landmark 160.
—Anderson Photo.

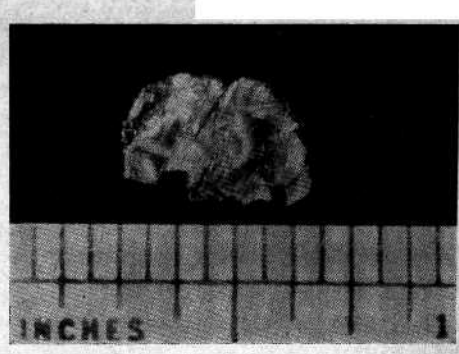
A short distance beyond, a small bronze plaque set in stone masonry marked the significant spot in a clump of sycamores. Nearby stood a gnarled and heavily initialed oak tree, doubtless the "Oak of the Golden Dream." So natural were the surroundings, one would almost expect to find wild onions growing there but I did not discover any.

In 1842 the area became a beehive of activity, as the news spread among the local Mexican population. It must have been a popular

subject of conversation around the haciendas of gold-hungry Spaniards of San Fernando. But the pay dirt did not last long. However, some of it reached as far east as the Philadelphia mint. Still the discovery was not sufficient to draw any great number of people across the country as did the discovery on January 24, 1848, when James Marshall found a flake of gold in the tail race of Sutter's Mill near the present town of Coloma.

What Marshall did with the first flake of gold from the Mother Lode during those exciting hours following the phenomenal discovery is explained in part from a notation James M. Hutchings wrote in his diary on April 5, 1854.

" . . . Today I saw Mr. Weimar who has the first piece of gold discovered in California at Coloma. He and his wife seem to be pleasant people. Mrs. Weimar said to me 'Marshall brought up the gold to me —I was making soap—and says he, "I believe I've got something like gold. I believe it is gold. Will you make some strong lye and test it?" I put it in with the soap and boiled it —for one day and two nights, and it was the same when it came out, and we all said "it IS gold, sure." ' . . .



Replica of Marshall Gold Flake.
—Anderson Photo.

The piece of gold weighs about $5 and contains a little quartz."

During the past year the Yosemite Museum has been fortunate in securing a replica of the historic flake of gold. The original now reposes in Washington, D.C., having been acquired from J. L. Folsom, Captain, Assistant Quartermaster, a man who appreciated the tremendous historic value of the gold and who was public spirited enough to present it to the National Museum.

A clever craftsman by the name of Scherer, employed by the Museum Laboratory in Washington, D.C., carefully sketched the details of the original flake and fashioned the replica shown in the accompanying photograph.

DEATH COMES TO A GIANT SEQUOIA

By James W. McFarland, Ranger Naturalist

Who can picture the force which could topple one of these forest giants? Those rangers and foresters who live among the Big Trees of the Sierras and even those who have spent a lifetime studying the fallen forest monarchs and have read in their annual rings of the story of the terrific struggle to survive have seldom, if ever, discovered a full grown Giant Sequoia "done to death" by a single force.

True it is that fire is the most destructive enemy of the Giant Sequoias. In its lifetime of several thousand years a tree is normally subjected to the ravages of many forest fires started chiefly by lightning. Even today approximately 50 per cent of the occurrence of forest fires in Yosemite National Park is caused by lightning—the remaining 50 per cent are man made.

A single fire has perhaps never

killed a mature Giant Sequoia. It would take weeks of burning, fed by fallen branches of other trees, for a fire to penetrate the great thickness of its asbestos-like bark and reach the living tissues beneath. In fact it is extremely improbable if a single fire has ever burned through this fire resistant protection. But, the heat of the more persistent fires frequently kills the cambium layer and cooks the sapwood beneath the bark so that by the following spring that area of the trunk dies and, after many years, the charred bark is shed exposing the dry, dead sapwood. Such a tree becomes an easy mark for future fires. It is only by such a succession of fires that many a Giant Sequoia has acquired great cavernous fire burns which have eaten into its heartwood and weakened the base of its massive trunk. Thus, fire is at least a contributing factor to the untimely end of many of these forest giants. And yet there are numerous examples, such as the Telescope and Haverford Trees, which have been gutted by great fires or burned through in several directions, exposing the annual rings of their early youth and leaving only a few narrow strands of trunk to support the several hundred tons of their huge stems in mid air. It is only then that the factors of lop-sided growth, soil erosion about the roots, and the winter storms may cause their downfall. Such giant sequoias, although repeatedly injured by scores of fires through a score of centuries, show a tenacity for life and a vigorous growth which in other species is characteristic only of the younger trees.

In the upper Mariposa Grove and easily seen from the road near the Telescope Tree is the result of one of the most titanic struggles which ever took place in these giant forests. This is its story, indelibly written, for all who will to read: Some 40 or 50 years ago one of the more rare, extremely low-hanging, thunderheads formed and moved up the east side of the basin which shelters the upper Mariposa Grove. Swirling, churning, and massing so low as to almost hide the huge trunks, the slate-colored clouds soon swallowed the forest giants from view. Suddenly a terrible, blinding flash lit the forest! Tongues of flame reached out and simultaneously struck each of a group of three trees about 100 feet above their bases, smashing about twelve feet out of the center of their trunks and hurling these huge pieces, some of which are more than 6 feet in diameter, 50 feet away. The first tree (14 feet in diameter) was struck just below its first limb, killing it instantly and pushing the remaining snag 20 feet forward against the second tree (17 feet in diameter) which was also knocked off balance by the force of the blast. After striking the first tree the bolt of lighting zippered down its trunk to the ground, ripping out huge slabs of bark. As if such colossal destruction was not enough to kill even a giant sequoia, it left a fire to crater its crown. The upper half of each of the three trees was left momentarily suspended in mid air for the split second of the lightning flash. Then, crashing to the ground, they wreaked havoc among the smaller trees. There the broken chunks of the trees, some of which are over six feet in diameter, lie to this day, bearing mute testimony of their once towering form.

The fragmentary tops of the second and third trees have taken on renewed growth. The third tree which is 21 feet in diameter exhibits a solid bank of luxuriant foliage some 30

feet high and two newly formed shoots have taken the initiative, producing two new tops at a height of about 150 feet.

INDIAN PAINT AND QUININE FUNGUS COLLECTED

By Robert N. McIntyre, Assistant Park Naturalist

As one wanders through the magnificent samples of old growth forest preserved in Yosemite National Park for the enjoyment and study of this and future generations, little does he realize that on either hand an arch enemy of that forest lies hidden but is constantly preying on these giants. A force more destructive than fire in the forest is slowly sapping the structural strength of these trees. This great destructive force comes from the wood destroying fungi or rots that have been endemic within the forest for thousands of years, hidden from the eye within the butts and boles of the trees but showing themselves to the trained forest pathologist by the presence of fruiting bodies attached to the trunks of the trees, often below dead limbs.

Wood destroying fungi are a natural and needed part of the forest picture as long as the fungus population remains endemic or is in balance with the growth of the forest, but if their presence becomes epidemic or endangers the growth and reproduction of the forest, then man must devise means to combat this excess in nature and produce a harmony between life and death within the forest structure.

Long before modern man discovered the life processes of forest fungi and molded their destructive power to his will, primitive man by trial and error discovered that the fruiting bodies found in the forest had many uses in his daily life. Watching deer and elk eat a fungus growing through the ground from the roots of trees, the family probably sampled a number of these fruiting bodies with sad results before a species was eventually chosen that had food value and good taste.

Thus many of the forest fungi throughout the world were and are used as food. Bright colored fruiting bodies or conks were often steeped in warm water and used as a dye for the cloth made by primitive women. Early man always on the lookout for dry material in the forest with which a fire might be kindled discovered that the conks of several fungi when mature were dry and punky when protected next to the bark of the tree. The fire stick and the flint could produce a blaze in this tinder-like material even in very wet weather. In bygone days when both kings and jesters had their official food tasters, many a lackey met his swift death by sampling food containing the "deadly amanita" a mushroom-like fungus. At one time the amanita rivaled the "deadly hemlock" as a poison without antidote.

Two fungi recently collected in Yosemite have been useful to man for many hundreds of years. Indian paint fungus, **Echinodontium tinctorium,** E. and E. (Boyce 1930; Weir and Hubert 1918) that attacks the heartwood of living white and red fir trees of the Transition and Canadian Zones, produces a fruiting body or conk that has been an item of Indian trade as important as the trade in obsidian used for arrow heads. The central portion of the conk is made up of a brilliant brick red material that when ground into flour

and mixed with deer tallow and bone marrow made a waterproof paint used as a body decoration by Indians for ceremonial and war paint. Indian tribes of the Pacific Coast States traded this prized fungus with tribes in the less fortunate regions where the true firs and hemlocks did not grow.

Quinine fungus, **Fomes laricis** (Jack) Murr., also called **Fomes officinalis** (Boyce 1923, 1930, 1932; Faull 1916), that preys on the heartwood of living lodgepole and sugar pine trees in Yosemite, produces a conk that is grayish in color with a white powdery interior having a bitter taste. For centuries this conk was used in Europe for many medicinal purposes. Prior to the discovery of the Cinchona tree, the quinine fungus was the world's only source of quinine, a drug which combats malaria. The false roots or mycelia of this fungus hidden inside the bole of the tree that has been attacked often form into white mats or layers within the wood, properly called mycelial mats. When exposed to the air in a moistened condition these mats give off a luminescence or fox fire seen on newly fallen logs in the forest during the hours of darkness. Many a night traveler has been startled by this natural phenomenon, attributed to rapid oxidation. Firmly believing that these mycelial mats or felts had great healing properties for wounds, many veteran loggers collected these felts and stored them for emergency use in the absence of a camp doctor.

Indian paint fungus was first seen by the author along the Merced Pass Trail during the summer of 1942. He thought it to be quite common in Yosemite and did not bother to collect a sample of the fruiting body. During the summer of 1948 a search of the museum collection revealed

Indian Paint Fungus
—Anderson Photo.

that none had been collected within the park. A check of the catalogue file showed that in 1936 specimens of the conk had been loaned to the museum by the Office of Forest Pathology at San Francsico, California, for display, but had been returned in 1940 with the following note, "Foreign to this park." On a field trip to Laurel Lake, October 3, 1948, one half mile south on the trail in Section 29, Township 2 North, Range 20 East, at an elevation of 6,300 feet, on a white fir snag, the author observed five large conks of the Indian paint fungus and collected one 12 inches in width and weighing about 14 pounds. After sawing a corner from the conk to view the brick red interior to confirm the species, the author conferred with Emil Ernst, Park Forester, who recalled seeing the fungus on white fir in Aspen Valley in 1931. Cruise sheets on file in his office confirmed his observation in Aspen Valley and pointed to other observations made by Mr. Ernst at Eastmeadows and Tamarack Flat.

Believing that Indian paint fungus could also be found on red fir, the author deliberately searched for it in the red fir forest east of the Glacier Point Road and above Mono Meadows on October 5, 1948. Within an hour the search was rewarded with the finding of three conks on a fallen

red fir tree near the Mono Meadows Trail in Section 17, Township 3 South, Range 22 East at an elevation of 7,200 feet. One small conk was collected at this time. A second check with the park forester disclosed that cruise sheets of July, 1931, Tamarack Flat, gave Indian paint fungus as the cause of red fir rot in that area. No mention was made as to whether conks were observed.

Fruiting bodies of quinine fungus have been observed on sugar pine trees within the park from time to time, but as in the case of the Indian paint fungus, the author was not aware that it had not been collected until a check of specimens in the museum had been made. On October 27, 1948, while searching for Indian mortar rocks near Harden Lake he observed three grayish white conks on a lodgepole pine tree growing near the fire road in Section 33, Township 1 North, Range 21 East. One conk was collected about 15 feet above the ground and was later identified as a huge sample of quinine fungus which weighed over twenty pounds. Two more large conks or fruiting bodies remain on this tree at heights of 40 and 85 feet. A check of the card catalogue showed that in August of 1940, C. A. Harwell, then Park Naturalist, collected the white mycelial mats or felts of this fungus from a decayed lodgepole pine log behind the tents of the High Sierra Camp at Tuolumne Meadows. We now have in our collection the conk that belongs to this destroyer of lodgepole and sugar pine.

SO YOU THINK THAT HALF DOME IS BARREN

By Earl L. Hubbs, Ranger Naturalist

Rising nearly a mile above the floor of Yosemite Valley is the imposing face of Half Dome, standing like a giant guardian over the entrance to the high country of Yosemite National Park.

Undoubtedly many thoughts pass through the mind of the visitor as he gazes up in wonder at the sheer wall, but probably paramount would be the thoughts of its breath-taking grandeur and its apparent utter barrenness. A climb to the summit of Half Dome enhances the first thought and completely destroys the second.

On reaching the top of the cable climb the hiker is taken back by the sight of living creatures on what he thought to be a lifeless "island" of 13 acres towering above the nearby landscape. Recently the author was met at the summit by several scurrying mantled ground squirrels **(Citellus lateralis)** and the sight of many lizards **(Sceloporus)** sunning themselves on the warm granite boulders. The numerous crevices proved to be the home of an extensive rock garden. Twelve types of herbaceous plants and four shrub species have been recorded from the relatively flat summit. In addition to the lizards and ground squirrels seen, yellow-bellied marmots **(Marmota flaviventris),** bushy-tailed wood rats **(Neotoma cinerea),** conies **(Ochotoma schisticeps)** and the rare Mt. Lyell salamander **(Hydromantes platycephalus)** have been reported from the treeless top of this giant guardian.

When this surprising "island" is studied it becomes very clear how such a varied life can exist on it. The melting of spring snows leave their mark in the moisture found in

the crevices where wind-blown soil and seeds become lodged to offer a fine medium for the plentiful plant life. Scattered remains of numerous hikers' lunches present many scraps for the existing rodent population in addition to the natural vegetative food. The abundant insect life is ample to sustain the insectivorous salamanders and lizards.

By climbing Half Dome, appearing so completely barren from faraway on the valley floor, one finds it to be flourishing with plant and animal life. Close examination of other scenic wonders of the Yosemite greatly increases their beauty and wonder in the eyes and minds of mortal man.

BOOK REVIEW

YOSEMITE AND THE SIERRA NEVADA. Photographs by Ansel Adams, selections from the works of John Muir, edited by Charlotte E. Mauk. Houghton Mifflin Company, Boston 1948. 132pp.

Whether you are a connoisseur of good books, naturalist, artist, photographer, writer, teacher, or scientist, you have a treat in store for you in "Yosemite and the Sierra Nevada."

Here is a unique volume combining the talents of two great interpreters of the natural scene. Although the photographs are recent and much of Muir's text was written more than half a century ago, the photos and captions appear to have been made for each other.

Like Muir, Ansel Adams has a deep sense of the subtle beauty of nature. Like Muir, he has spent many hours alone in the mountains, in intimate contact with earth forces —the clouds, the winds and the storms. The two men knew what they were interpreting, and the precision with which the written word and the photographs were matched combine to make an extremely forceful presentation of many outdoor moods.

The format of the book is unusually pleasing. It measures slightly over 8 x10 inches allowing ample room for effective margins to set off both illustrations and meaty text. In the first part of the book Miss Mauk brings together some of the finest of Muir's descriptive writing, while in the latter part appears 64 of Mr. Adams' exquisite photographs. Of special interest to photographers are several pages of informative text by Mr. Adams on the methods he used to achieve his extraordinary effects.

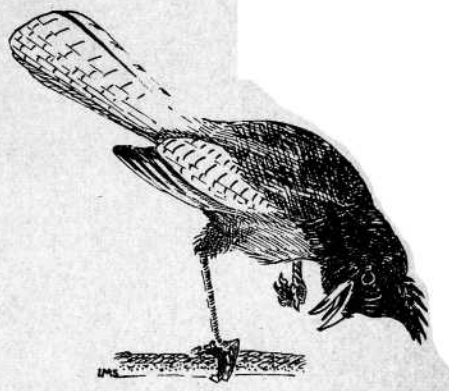
The handsome volume contains the essence of outdoor appreciation. No one can read this book without gaining immeasurably in understanding and perception of the true values of the Yosemite and the High Sierra. Inevitably one feels as Muir has described in one short caption: "I only went out for a walk, and finally concluded to stay out till sundown, for going out, I found, was really going in." (R. H. A.)

Editor's Note: This book may be ordered through the Yosemite Natural History Association at $6.30. This price includes tax, postage and mailing.)

JAY GETS A "HOTFOOT"

By R. J. Rodin, Ranger Naturalist, 1946

One day in July, 1946, as I stood in my tent in Camp 19, a brazen, scolding blue-fronted jay entered the tent and perched himself on the table for a few moments. Then he flew up and alighted on top of the stove pipe. The pipe was very hot for I had been preparing supper, and the jay couldn't figure out what had happened to his perch. He danced up and down, first on one foot then on the other, scolding and screeching all the time. To save him from more grief, I shooed him out of the tent from whence he flew to the low limb of a nearby ponderosa pine. Quietly he bent his head down, raised one foot and made an



attempt to see what was on the bottom of it, giving evidence that he still felt the heat of the stove pipe. This is probably the first record of a blue-fronted jay getting a "hotfoot."

CHRISTMAS BIRD COUNT IN YOSEMITE VALLEY

By Bona May McHenry

This year the Christmas Bird Count was done on the heels of a snowstorm that buried ground cover and food, and left the forest sheathed in ice and snow. Wherever the bird counter left the plowed-out road, snowshoes were needed.

The thrill of the unexpected was provided this year by a solitary pipit extracting a dinner of frozen insects from an apron of ice in the Merced River, and by a pair of Clark's nutcrackers that made one nostalgic for the high country.

The 1948 Christmas Count showed a total of 42 species and 622 individuals spending the holiday season between Mirror Lake and El Portal as follows: pied-billed grebe, 1; California heron, 1; w. red-tailed hawk, 1; golden eagle, 2; duck hawk, 1; e. sparrow hawk, 1; plumed quail, 8; California pigmy owl, 1; w. belted kingfisher, 6; red-shafted flicker, 7; w. pileated woodpecker, 3; California woodpecker, 32; Modoc woodpecker, 3; n. white-headed woodpecker 13; willow woodpecker, 1; black phoebe, 3; blue-fronted jay, 88; long-tailed jay, 1; Clark's nutcracker, 2; short-tailed chickadee, 34; red-breasted nuthatch, 6; Sierra creeper, 54; dipper, 9; w. winter wren, 6; dotted wren, 5; w. robin, 4; n. varied thrush, 4; dwarf hermit thrush, 1; mountain bluebird, 3; Townsend's solitaire, 1; w. golden-crowned kinglet, 116; w. ruby-crowned kinglet, 16; American pipit, 1; n. pine siskin, 12; green-backed goldfinch, 6; Sacramento towhee, 17; Sacramento brown towhee, 8; slate-colored junco, 2; Thurber's junco, 126; white-crowned sparrow, 1; house sparrow, 12; Modoc song sparrow, 3.

In 1947, 32 species and 414 individuals were counted.

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Dan Anderson