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W. B. LEWIS

Superintendent



“LEARN TO READ THE TRAIL-SIDE”

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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.

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See Schedule of Nature Guide Field Trips.

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

—TAKE ADVANTAGE OF THEM—



YOSEMITE NATURE NOTES

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June 30, 1927

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NIGHT ANTS AT HOME

By D. D. McLean

On the evening of May 13 I went up toward the foot of El Capitan to wander about through the boulders with a powerful flashlight. I found several different homes of ants that were working diligently in the moonlight. One nest of small, dark-colored ants was located under the edge of a boulder about a foot across. Here all was business, for they were all apparently busy. A large flying termite had been captured by them and was being torn to pieces. The four wings had been severed at the body, and the abdomen had been cut away from the thorax. One ant had the head, which was many times greater in weight than the ant itself. At least half a dozen were wrestling with the thorax in an effort to take it underground, and fully as many were busy with the abdomen. The one carrying the head finally disappeared down the entrance hole, and several minutes later the thorax, also, was carried in. The others still worked with the abdomen.

A spider came along and blundered into the mass of ants near the entrance. A large number dashed toward him, each after a

leg hold, but he dashed away for his life and managed to make it without being pinned down. One tiny ant came in dragging a small caterpillar many times larger than himself. Still another was pulling some winged insect. The brilliant light from the flashlight did not seem to inconvenience them in the least.

At another place two slender-legged, rapid-moving night ants were found prowling over a great boulder, presumably hunting. They were large and extremely active. They wandered about over the boulder, covering most of its surface in their ramblings, but did not find any prey. They finally disappeared over the side. One big, black carpenter ant was seen carrying a small spider, but he was lost in some oak leaves.

These ants were all of different species and all busily engaged in food gathering. I have seen ants at night many times that I have never seen about during the day time. However, the long-legged one seen on this evening is the only one I have never seen abroad in daylight.

INDIANS GRAZED ON HERBAGE

By C. P. Russell

THE ASSERTION that California Indians habitually grazed like herbivorous animals is usually received with skepticism by most people. But there is evidence aplenty that in the days of dense Indian population, days before the tribes were greatly influenced by the whites, the primitive Californians did turn out on the meadows to feed on certain green plants.

Dr. John Marsh, who settled at the foot of Mount Diablo in 1837, wrote to Lewis Cass in 1844 as follows:

"Their (Indians of the Mount Diablo region) food varies with the season. In February and March they live on grass and herbage; clover and wild pea vine are among the best kinds of their pasturage. I have often seen hundreds of them grazing together in a meadow, like so many cattle." (Elliott's "History of Fresno County," 1881.)

V. K. Chestnut, in his "Plants Used by the Indians of Mendocino County," speaks of seeing groups of Indians wallowing in the wild clover, plucking the herbage and eating it by the handful. C. F. Saunders describes the use of parched kernels of the Pepper-nut of California Laurel, munched with the clover to obviate bloating and indigestion. Saunders also states that the herbage was sometimes dipped in salted water to avoid the same unpleasant difficulties.

When the second expedition against the Yosemite Indians was made in May, 1851, members of Captain Boling's company succeeded in capturing old Tenaya, chief of the tribe. For some days he was held a prisoner at Boling's camp near the present sentinel Hotel site. H. H. Bunnell, a member of the invading force, writes as follows regarding the herbivorous habit of Tenaya.

"He (Tenaya) was a hearty feeder and was liberally supplied. From a lack of sufficient exercise, his appetite cloyed, and he suffered from indigestion. He made application to Captain Boling for permission to go out from camp to the place where grass was growing, saying the food he had been supplied with was too strong, that if he did not have grass, he should die. He said the grass looked good to him, and there was plenty of it. Why then should he not have it, when dogs were allowed to eat it?"

"The Captain was amused at the application, with its irony, but surmised that he was meditating another attempt to leave us; however, he good humoredly said: 'He can have a ton of fodder if he desires it, but I do not think it ad-

visable to turn him loose to graze.' The Captain consented to the sergeant's kindly arrangement to tether him, and he was led out to graze upon the young clover, sorrel, bulbous roots, and the fresh growth of ferns which were then springing up in the valley, one variety of which we found a good salad. All of these he devoured with the relish of a hungry ox."

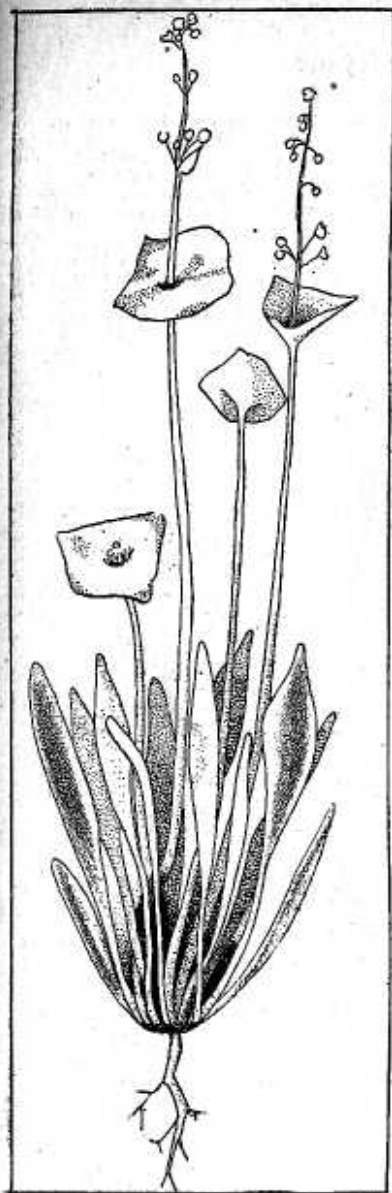
Native Yosemite plants, the leaves and stems of which are known to have been eaten raw or cooked by the aborigines, are as follows: *Sonchus asper*; the Prickley Sow-thistle; *Phacelia ramosissima*; *Lotus stigosus* of the pea family; *Lupinus*, sp.; three species of clover; *Trifolium obtusiflorum*, *T. tridentatum*, and *T. microcephalum*, the small headed clover; *Eschscholtzia californica*, the California Poppy; *Montia perfoliata*, Miners Lettuce; *Chenopodium album*, Lamb's Quarters, and *Pteris aquilina*, Common Bracken.

Readers who are interested in knowing more of green plants eaten by Indians are referred to "Plants Used by Yosemite Indians," by Florence Brubaker, Yosemite Nature Notes, Oct. 1926; "Plants Used by the Indians of Mendocino County, Calif.," by V. K. Chestnut; "Contributions from the U. S. National Herbarium Vol. VII, No. 3, Useful Wild Plants of the United States and Canada," by Charles Francis Saunders, 1926; "Handbook of the Indians of California," by A. L. Kroeber, 1925; "Plants Used by the Klamath Indians," by Coville, 1897, and "Contributions to North American Ethnology," Vol. III, by S. Powers.

MINER'S LETTUCE *Montia perfoliata*

One of the succulent plants of which the Indians were fond. Stephen Powers is authority for the statement that Indians would place the gathered plants near the nests of red ants, permitting the insects to run over the leaves, so flavoring them with formic acid. This acidity took the place of vinegar that the white man uses on his salads.

See illustration on following page.



A WHITE-HEADED

WOODPECKER'S NEST

For several mornings I was awakened at an early hour in my room at the Rangers Club by a tapping sound somewhere outside the building. There would be a series of taps, then a pause of several seconds, then another series of taps.

Finally, after hearing it a number of mornings, I concluded to investigate. At the foot of one of the pine trunk corner posts of the back porch I found a considerable mass of pine chips, and about two feet and a half above the ground was an entrance hole of woodpecker's home. As I approached the nest hole, a female white-headed woodpecker thrust her head out and sized me up for a few moments and then flew up into a nearby pine. The male joined her and they talked in low tones. Another hole had been started a couple of feet above the occupied one, but something had caused them to change.

The male bird gave an exhibition of himself in a peculiar flight song, which was a series of rapidly uttered chuckles and peeks, accompanied by a peculiar gliding flight with the wings slightly elevated and fully extended. On perching near the female, there was a great deal of bowing and talking. The whole back of his head had the feathers raised, so that the red patch stood out sharply.

The excavating is still continuing but must be nearly completed. We hope they will raise their family so we can get some pictures of the young birds, also the adults.—D. D. McLean.

A TIMELY NATURE LESSON

By H. C. Bryant

In late spring and early summer deer leave their winter quarters and go into the higher mountains. The bucks, whose antlers have started to grow, again seek shelter along the higher ridges. The does hold to the small mountain meadows and to the ridges near lakes and streams. Here on one of these brushy ridges the mother deer finds a secluded place and gives birth to twin fawns. For the first few days the young lie quietly in the shelter of a bush, being dependent upon their protective coloration (a white-spotted, reddish brown coat blending with the ground) and lack of odor to escape detection. The mother leaves the fawn only when necessary to obtain food and water, never going far and always standing guard, alert to every motion or sound.

To these same fawning grounds come fishermen and mountain hikers, recreation bent. By chance they discover a fawn. Truly it DOES seem lost and abandoned by its mother! It IS thin and starved looking! It instinctively plays "possum" when touched, strengthening the theory that it IS weakened by starvation! "Poor thing! Let's take it to camp and rear it on

a bottle," is the usual comment. So the little creature is carried away while the helpless mother looks on from some concealed vantage point. Then come days of exacting care usually followed by the death and burial of the fawn.

To see a new-born fawn is a rare privilege and one's appreciation is much more intelligently expressed by leaving it undisturbed. To carry it back to camp instead of leaving it to the care of its natural mother is to commit an act in violation of the law. Though summer vacationists may think they are performing an act of benevolence, they are in reality but kidnapers and rightly do they deserve all the derisive thought that goes with the name.

The Fish and Game Commission looks with disfavor on "fawn kidnapers." A letter directed to it for a permit to keep a fawn will be met with a rebuke. Very rarely do bottle-fed fawns live and because the Fish and Game Commission exists for the purpose of conserving the wild life of California, it can not give its sympathy to acts that so materially reduce the deer supply.

National park regulations prohibit disturbing of fawns in Yosemite.

Mountain Lions at Alder Creek

In the vicinity of Alder Creek checking station, on the Wawona road, the mountain lions are increasing in numbers.

This king beast of the forest is making untold slaughter of our deer. Fishermen tell me of kills being made throughout the forest. Some times the lion eats a very small portion and leaves the remainder for the coyotes and bear to devour.

Friday morning, May 20, Mr. Barnett, coming by my station with horses, told me of a fresh kill down the road. I went to the location stated and found the carcass still warm. Apparently the lion had jumped from a rock down upon the deer, then dragged the carcass across the road and down the bank about one hundred yards into a thicket of small pine trees and covered it very neatly with pine needles. The lion will probably come back and feed off the carcass again if it is covered. But it is rare

that a lion will eat off the same carcass twice. Their nature is to make a fresh kill every time they eat.

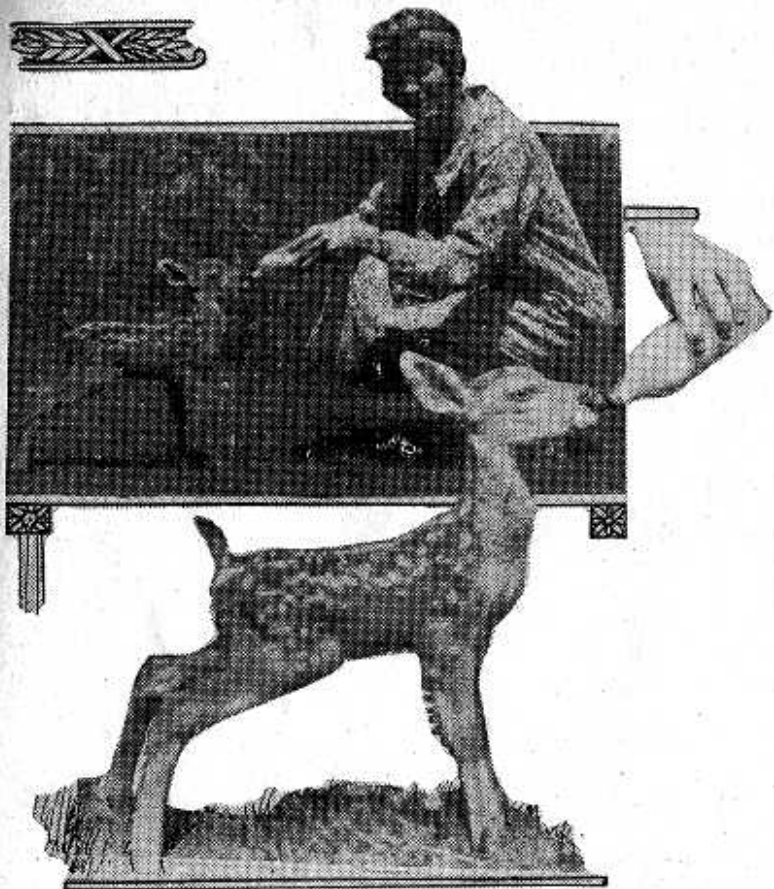
Along Alder creek and South Fork of the Merced there were dozens of deer killed this spring. The deer are numerous and tame, and it is no trouble for the lion to make a kill whenever it is hungry.

Every morning and evening a number of deer come to the salt log which is close to our station. One evening while I was sitting in the station I heard the deer snort and run in every direction. I immediately investigated and found the track of a large lion within fifty feet of the salt log where the deer were licking salt. For two days the deer were so frightened they did not come back to the salt.

It is difficult to know just how many lion are in this vicinity and how many deer they kill.—Ranger John W. Bingaman.

Continued on page 48.

Do Not Try to Adopt a Yosemite Fawn!



In the case of the infant shown above the mother deer was known to have been killed by an automobile. A merciful attempt was made to save the fawn by feeding it from a bottle. As is usually the case, the little animal died. Park visitors are urged to leave undisturbed any fawns they may come upon. The supposed negligent doe is sure to be nearby.

A NATURE PRESERVE FOR YOSEMITE

By HAROLD C. BRYANT

FEAR is becoming general that artificial conditions will eventually entirely supplant natural ones even in mountainous districts. There is good reason for this fear. In the most out-of-the-way places in the Sierra one finds oats and barley growing, perhaps from seeds dropped from the pack of some pack animal. The European sheep sorrel grows everywhere. Weeds of various sorts are encroaching on the wilderness. That quarantined pest of the motorist, the puncture vine, now grows at El Portal, the entrance to Yosemite National Park. House mice and house rats, natives of Europe, thrive in nearly every mountain resort. The opossum, a native of the Southern states, is becoming common in Sequoia National Park. Furthermore, these chance introductions are augmented by purposeful introductions of fish, of plants and of animals. Requests for permission to introduce some exotic game bird or animal or to plant some non-native tree or shrub are numerous. Plantings of non-native trees are suggested for national forests.

With no, or poorly enforced, restrictions against such mixing of faunas, how will students be able to study and appreciate original conditions? Proper understanding of artificial conditions is dependent upon knowledge of unspoiled nature.

This situation stirred the Ecological Society of America to advocate preserves of natural areas, and in the "Naturalist's Guide to America" an enumeration of such areas and proposed ones is found.

Practically unrestricted camping in national parks and national forests favors introductions of all sorts, some of them dangerous to the success of native forms. As a consequence, the move to establish wilderness areas within national forests and that to set aside perpetual preserves in national parks is timely. Without such a program there is little hope for unspoiled nature even with extensive wilderness areas such as California possesses.

European nations have long maintained areas of this sort set aside for the use of naturalists and their students. In fact, the usual conception of a national park in Europe is an area not open to the public, but one preserved for the use of nature students.

Professor Hall Outlines Proposal

Dr. J. C. Merriam and Harvey M. Hall of the Carnegie Institution and several others have felt the need of preserved areas of this sort in the West. An area suitable as a nature preserve has been designated in Yosemite National Park. Park Service officials have expressed

their interest and are agreeable to the plan.

The following outline of the project has been issued by Prof. Harvey M. Hall:

1. The General Plan:

It is proposed to set aside approximately seven square miles in the high Sierra Nevada for complete protection from all disturbance, and for all time. Domestic animals, camping and fishing would be excluded. Admission to be only by special permission and only for the purpose of scientific study or for necessities of administration. Wild animals and plants would not be removed or otherwise interfered with unless invasion from without should disturb the natural balance.

2. Objects:

The principal object would be to furnish opportunity for the studies of plants, animals, geologic features, etc., under natural conditions. Neither the direction nor the importance which these studies might assume can now be predicted. Opportunity would be afforded for the study of the natural succession of events, such as changes in the animal and plant life. The reservation would furnish to all future generations a sample of what could be found in other places if man had not interfered.

3. Location:

An area of about seven square miles has been selected along the crest of the Sierra Nevada to the north of Tuolumne Meadows. This area occupies a portion of Moraine Flat and includes the headwaters of Delaney and Moraine creeks. This proposal does not exclude the



Ranger Billy Nelson on a peak within the Yosemite wilderness preserve. Ranger Nelson holds a skull of a mountain sheep. This animal is now extinct even within Yosemite National Park. The species still exists south of the Park and some philanthropic lover of the wilds is urged to bring a band of the animals back to their Yosemite haunts.

—Photo by C. P. Russell.

consideration of other areas nor the enlargement of this one.

Suitability of the Proposed Site

1. It includes a part of the crest of the Sierra Nevada.

2. It is picturesque, with alpine peaks and cirques to the north, a general southerly exposure, and splendid outlooks to the Cathedral Range.

3. The lower slopes are well-forested, with a too uniform stand of lodge-pole pine. If given absolute protection, this may swing back ultimately to other types of forest. There is a small amount of hemlock and along the upper limits of the forest is the usual fringe of white-bark pine.

4. The flora is very representative of the life zones at this altitude. The forests are accompanied by the usual herbaceous types and there are extensive meadows with a profusion of wild flowers. The flora

changes as the stream banks are approached. Several small lakes and ponds are bordered with bogs which make ideal habitats for species of plants and animals not found elsewhere. The upper slopes exhibit a characteristic chaparral and the number of species of herbaceous flowering perennials becomes constantly greater toward the summits, where is found a rich alpine flora.

(5) It is watered by several small streams, and there are a number of small lakes and ponds.

(6) It is accessible but is not reached by any roadway nor by any well-beaten trail. It is wild and seldom invaded at present. Before the Yosemite National Park was created it was over-grazed by sheep, but this is true of practically all of the high Sierra Nevada.

(7) The area is not one which is likely to be demanded by commercial or other economic interests of

the future.

Precedent

There is, perhaps, no exact precedent for this proposal. The plan is approximated in this country by some of the wild life reserves, by certain wild flower preserves, and in the redwood districts, but in each of these the object is different. In Europe are found better examples of complete reservations, such as the national parks of Sweden and of Switzerland. Somewhat similar but less complete are reservations in Bavaria and those in the forest of Fontainebleau, France. Czechoslovakia is just now establishing a reservation with objects very similar to those outlined above, and this abuts upon a similar one to be set aside by Poland.

Administration

Plans for protection would need to be left in the hands of the park administration. An ideal protection would be a heavy woven wire fence around the entire area, but this is admittedly impracticable. Signs at frequent intervals around the boundary are a suggestion. These seem

desirable whether or not the area is fenced. Some system of patrol during the summer months is also suggested.

Endorsements of the Plan

No attempt has been made to obtain the endorsement of any organization. The movement has, however, the voluntary endorsement of the following, all of whom are more or less familiar with conditions in the upper portions of the Yosemite National Park: Dr. J. C. Merriam, president, Carnegie Institution of Washington; Dr. A. W. Hill, director, Royal Botanic Gardens, Kew, England; Dr. K. Domin, director, National Museum, Prague; Prof. E. E. Babcock, Dr. Harold Bryant, University of California, Carl P. Russell, H. M. Hall and David D. Keck made a detailed examination of the proposed site in August, 1926, and are prepared to make recommendations.

This one area is but a start. Several such areas will be needed. Furthermore, after the areas have been designated it will take strict patrol and careful administration to make them fulfill their purpose.

Continued from page 44.



A California Mountain Lion

EXPLANATORY LABEL PLACED WITH CAGED LIONS

The great interest of visitors to the mountain lions of the Yosemite "zoo" has led park service of-

ficials to post the following printed explanation on the lion cage:

CALIFORNIA MOUNTAIN LION

Felis oregonensis californica

ROCKY MOUNTAIN LION

Felis oregonensis hippolestes

The smaller lion in this cage is a female California mountain lion from the Yosemite region. She is one of three that were captured as kittens by Jay C. Bruce, near Wawona in April, 1918.

The larger animal is a male Rocky Mountain lion, captured in Yellowstone National Park about 1918.

No other American mammal has so wide a range. It is found from Canada to Patagonia, from the Atlantic to the Pacific.

Mountain lions are known as cougars, panthers and pumas. They do not attack human beings but are destructive of deer. Each adult lion may be expected to kill one deer each week. Fortunately they are not numerous; probably less than 20 lions range within Yosemite National Park. It is evident that lions and other predators have not levied upon the Yosemite deer population in excess of their recuperative powers.

Lions are so wary that they are seldom seen except when trailed and treed by dogs. Many persons have lived in the mountains for years without seeing one. Human beings are in no danger of attack from mountain lions.

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.



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Dan Anderson