

YOSEMITE NATURE NOTES



February, 1934

Volume XIII

Number 2

Yosemite Nature Notes

THE PUBLICATION OF
THE YOSEMITE NATURALIST DEPARTMENT
AND THE YOSEMITE NATURAL HISTORY ASSOCIATION
Published Monthly

Volume XIII

February 1934

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Our Nature Program for Children

By RANGER NATURALIST
REYNOLD E. CARLSON

The national parks have been set aside for the enjoyment and inspiration of the people of the nation; yet, it is needless to say only a few of the people who enter them take full advantage of the opportunities there offered. It is to aid the visitors in gaining a fuller understanding and appreciation of our parks that the educational service is offered the visiting public. However, the interests of most adults have already been fixed by past experiences, and many of them are incapable of gaining the fullest measure of understanding from our national parks. With children, on the other hand, the situation is altered. Here is an opportunity to develop an attitude towards the world of nature that will be an inestimable source of fruitful pleasure in years to come.

The next generation of adults who will doubtless have more leisure time than the present generation, will find increasingly in our national parks and in all of nature a worthy use of that leisure. While the next generation is still in its childhood is the time for instilling those lessons in conservation and appreciation of the out-of-doors

which are so much more easily impressed upon children than upon adults. It was with this purpose in mind that the Yosemite Junior Nature School was organized.

During the past summer 379 individual children were from time to time in attendance on the field trips of the school. All activities were conducted with the thought uppermost that children should become interested in the world of nature. The measure of success was not in the actual facts garnered, but in the development of a wholesome attitude towards all natural phenomena.

An outline of the school's program is the best method of describing its activities. Each morning from 9 to 10 the children under 10 years of age met in the Junior Nature School Clubrooms at the Museum. In the first five to fifteen minutes the subject upon which the group was concentrated for the hour was introduced. Mondays were generally devoted to trees, Tuesdays to birds, Wednesdays to animals, Thursdays to flowers and Fridays to miscellaneous subjects, such as rocks, history, Indians, etc. Fridays were also used on four oc-

casions for children's caravan trips to the fish hatchery, Indian caves, bears, and "bird-man," all of which are interesting to children. The introduction for the day consisted frequently of the showing of mounted specimens from the museum, of talks about materials brought in by the children, or of a study of flower parts. The balance of the hour was usually spent in a short nature walk in which an effort was made to cultivate alert observation of all natural phenomena, but especially of the subject for the day. Nature games were often used to help maintain interest and enthusiasm. On several occasions short stories about nature subjects proved very effective.



The time from 10 to 11:30 was set aside for the children from 10 to 15 years of age. With this group the same general type of program was used except that the material was adapted to the older children. The

longer time of meeting gave a greater opportunity for short talks on such subjects as the discovery of the valley, Indian customs, plant reproduction, etc.

The greatest problems presenting themselves in the school were the difference in background and abilities of the children and the difference in length of stay in the school. In order to care for the more advanced group and for those who would spend several weeks in the valley, two test cards and an award card for achievement were worked out. The card for the younger children consisted of 15 definite goals to be achieved, such as identifying trees and learning the ant-lion's method of obtaining food. The test card for the older group consisted of 26 achievement tests of a more difficult nature. The emphasis in the test cards was placed on the observation and understanding of the things that were to be seen, felt or heard in the Yosemite Valley and an understanding of its interesting history. The test cards succeeded in stimulating and giving a real sense of achievement to those children who might not be interested in the classroom repetition necessary for the benefit of the new children who were spending only a few days in the valley.

The tests were given by a number of volunteer leaders, each of whom daily took two or three of the children on short walks for the specific purpose of giving them opportunities to pass tests. The testing was made difficult enough to prevent too rapid completion, the average time for the completion of the whole card being about seven days. After a student completed the test requirements, he was given a certificate signed by the park superin-

tendent at the camp 15 evening camp fire program. In the course of the six-week session 46 children completed their tests and earned the award. Those over 13 years of age who had finished their tests were given an opportunity to demonstrate leadership ability and wide general knowledge of the natural history of the Yosemite region. If they seemed capable they were then classified as junior leaders and given the opportunity of helping other students and of passing other students in tests. Five children in the course of the summer were given the classification of junior leaders.

A large group of the advanced children, headed by capable leaders, used much of their time in starting what may some day become a worthy junior museum. Interesting exhibits covering several phases of the natural history of Yosemite were set up.

In all of the program of the school the endeavor was made to appeal to as many of the senses as possible and to attempt to create a vital interest in all of nature. This year marks the fourth year of this Junior Nature School in our Yosemite naturalist program. Enthusiastic response proves the worth of the effort.

PLANT LIFE ON ROCKY POINT

By Ranger Naturalist Reynold
E. Carlson

A struggle for existence, with all its dramatic interest, may be read today by the nature student at Rocky Point in Yosemite Valley.

Exactly 11 years ago this Febru-

ary a new rock slide covered some two acres at Rocky Point. The eastern section received the heaviest slide, with the result that all existing vegetation was either swept away or covered by the new rock.

Since that time new flowers, new shrubs and new trees have sought to gain a foothold on this barren eastern slope. Today the evidence of their success is plentiful. A large number of annuals and shrubs, which seem to be preparing the soil for a forest to follow, have appeared in spite of the rocky character of the slope. Yawning pentstemon, yerba santa and Brickellia californica are the most common of the many shrubs.

Numerous young trees have appeared, so that the eventual appearance of a forest stand seems likely, it being probable that the trees will finally win out in the struggle for existence over the plants that first appeared on the slope.

The western yellow pine is the most common tree in the section. There are approximately 30 trees of this species less than two feet high, 10 from two to four feet and five over four feet, making a total of nearly 50 trees ranging from six inches to over six feet in height.

Young Douglas firs, golden-cup oaks, incense cedars, broad-leaf maples, elderberries, yellow willows and alders are also present. The fact that the majority of these trees are under two feet in height indicates that during the last few years conditions have been especially favorable for their growth. All of these young trees seem to be in a very healthy condition.



Rare Bird Observations

By A. E. BORELL
Naturalist

Probably most visitors to Yosemite feel that the park naturalists have little chance to do more than give talks and guide parties on various trips. This is largely true of the summer months, but during the remainder of the year the naturalist has a wide range of duties, some of which take him into the less civilized portions of the park and give him an opportunity to make observations on the wild life.

Recently Mr. Beatty and I made a 10-day trip to the Tuolumne Meadows region, where we gathered data on the Lyell, Maclure, Conness and Kuna glaciers. Among other things we recorded two birds that are rare in Yosemite National Park.

WILSON SNIPE

The Wilson snipe is a bird that is known to those who frequent the marshes of the San Joaquin and Sacramento valleys, but is very rarely seen inside the park. It has been reported from Yosemite valley, but has, so far as I can learn, never been recorded from any other part of the park. On October 24, 1933, I was hiking along the Lyell fork of Tuolumne river at about

9000 feet elevation. As I passed through a swampy area a Wilson snipe flushed close by and flew up the river, giving me a chance for positive identification.

HORNED LARK

As I entered the upper end of Tuolumne Meadows on the same day, another rare bird was encountered. This was a small brownish bird which was foraging in the short grass of the dry meadow. It permitted me to approach to within 15 feet and I found that it was a horned lark. The following day (October 25, 1933) Mr. Beatty and I observed a flock of about 10 horned larks in the Dana meadows at about 9800 feet elevation. So far as I can learn, horned larks have not been recorded previously from Tuolumne or Dana meadows and there are very few records of this species inside Yosemite National Park boundaries.

POOR-WILL

Shortly before leaving on the glacier trip I saw the first poorwill that I have ever seen in Yosemite. Poorwills, because of their nocturnal habits, are rarely seen except by those who recognize them at

night as they fly up from the road at the approach of a car. On the west slope of the Sierra they live primarily in the upper Sonoran life zone, but occasionally they stray as high as Yosemite valley, which is in the transition zone. However, poorwills are so rare here that few residents and visitors of Yosemite have ever seen one. On the morning of October 6, 1933, I found a poorwill in one of our banding traps. The trap was set on the ground beneath an open stand of young white fir in Camp 19. The poorwill probably hopped into the trap by accident or went in after insects that may have been feeding on bread crumbs which had been placed there for bait. As poorwills are insect feeders, it is not likely that this one entered the trap for the bait.

Although records of the occurrence of birds in Yosemite National Park have been made since 1851, still hardly a year passes during which a new bird is not added to the list. Records of rare visitors or extension of the range of the more common species are made almost monthly. The fact that our bird population is not constant and new observations are always possible adds stimulus to the study of birds.

"AIR-MINDED" BIRDS

By Ranger Naturalist Craig
Thomas

"Air-mindedness" has taken the country by storm in the past few years, but some of Yosemite's ground and tree-living birds seem to have beaten the country to it.

The blue-fronted jays usually spend their time hunting for acorns, berries, ground-crawling insects and their larvae and nuts. The woodpeckers hunt for acorns and tree-boring insects; the robins scurry across the ground in search of worms and insects that may be hiding there. Yet each of these three kinds of birds has been seen sitting on a branch which forms a vantage point from which to survey a garden or open glade. Carefully they watch the air lanes, and when moths and beetles fly by, out they dart in the most approved flycatcher style, taking a buffet supper as they go and return to the same



Blue-fronted Jay

(*Cyanocitta stelleri frontalis*)

branch to await a second course. It would seem that this change in the menu and style of getting food would correspond to a beach picnic in our summers. At least they give every evidence of having a good time without the subsequent cleaning up we must go through after our picnics.



Camping in Yosemite

A. E. BORELL

Naturalist

Living in a tent has its disadvantages but it also has advantages; especially to those who derive real enjoyment from seeing wild animals in their natural state. A ranger in Yosemite, who formerly lived in a tent, remarked that he enjoyed the conveniences of the house recently assigned to him but missed being close to the out-of-doors as he was when he lived in a tent.

It has been my pleasure to live in a tent in Camp 19 for about 12 months during the past two years. Our tent, in the naturalists' section of Camp 19, was located among pines and firs at the base of a talus slope. During part of the time no one else lived in the camp so there was little to disturb the animal life. Birds of many species were about the tent every day. Food placed on tables was always an attraction and enabled us to observe at least 15 species of birds at close range.

Deer passed through the camp almost daily and usually stopped to see if there was any food on the tables. We noticed during one period that all of the food disappeared every night, even the crumbs were gone. Something besides the birds and deer were cleaning the tables. One evening as we drove home the lights of the car gave us a glimpse of some animal leaping from the bird table. Perhaps it would return. We waited quietly a few minutes, then again turned on the lights and to our surprise saw two gray foxes on the table. They fed for a few moments then jumped from the table and trotted toward the woods. They stopped to look back at the lights, one sat upon a rock and then

disappeared into the night. More food was put out and the visit of the foxes became almost a nightly occurrence. They soon became tame enough for the observer to approach to within 30 or 40 feet. One evening, with the aid of a flashlight I followed the foxes back into the woods along the edge of the talus slope. A rustle in the leaves caused me to turn the light to one side and there not 20 feet away was one of nature's most independent creatures—a skunk. It was busy foraging for insects or mice among the rocks and leaves and paid little attention to me. As usual, the skunk tended strictly to its own affairs so long as I did not disturb it.

Occasionally a coyote was seen from the door of the tent and we could expect at least one bear to visit the camp sometime during



the day or night. A mother bear occasionally brought her cubs to the camp to search for food.

A few times during the summer months we had an opportunity to see a strange animal of which most people have never even heard. Although relatives of the raccoons, they are called miners' cats or ring-tailed cats, and the reason so few people see them is because they are strictly nocturnal. They are retiring and quiet in their movements; but the camper who lives in a quiet portion of the park may have the thrill of seeing one of these animals as it goes quietly about his tent seeking mice, insects or scraps. If the camper puts out food he may be rewarded by having the miners cat pay him a visit.

A sudden thump of something striking the tent and the scurrying about of an animal obviously larger than a mouse may cause the uninitiated some alarm. If he investigates with a strong flashlight he will probably see two small glowing eyes. As he goes closer the animal will spring to a nearby tree and the camper will recognize the flying squirrel. This is another creature which came often to feed at the bird tables. Occasionally one would get caught in a bird banding trap, which would give us an opportunity to examine it closely. Within a few minutes after capture it was usually tame enough to eat bits of walnut from our fingers. One of these captured squirrels was released on the base of a power line pole. It promptly climbed to the very top of the pole and glided to a tree 30 yards away.

One evening the distress cries of a blue-fronted jay caused me to rush out to investigate. The cries became less and less vigorous and by the time I reached the tree from which the disturbance came I could hear but a faint gasping

A powerful flashlight revealed a spotted owl perched on the limb of a large yellow pine holding in its talons the lifeless body of the jay.



I watched the owl for a time as it tore into the flesh of the bird and the feathers drifted toward the ground. Nature is not always so kind as many people would like to imagine.

These incidents give some idea of the camper's opportunity to become acquainted with many kinds of birds and animals and to learn something of their ways and their struggles.

BRIEF NOTES

SIERRA HERMIT THRUSH

Just below the ranger station at the Mariposa Grove, a Sierra hermit thrush's nest was observed June 30. There were four young thrushes in the nest which were nearly large enough to leave the nest. The nest was located about two feet from the ground in a clump of chinquapin (*Castanea sempervirens*). Among other materials used in the construction of the nest was a considerable amount of staghorn lichen.

Sunlight is Fatal to the Pacific Rattlesnake

By ANN HUNT,

1933 Field School, Yosemite
National Park

An interesting observation on the amount of direct sunlight necessary to kill a Pacific rattlesnake (*Crotalus oreganus*) was made by the members of the Yosemite School of Field Natural History on July 22. The specimen was found by one of the girls at Chowchilla Mountain Ranger Station (altitude 6600 feet) as she was walking along an old fallen log in crossing an azalea thicket.

The snake was about three feet long and beautifully patterned with the characteristic black markings, roughly hexagonal on a grayish-brown background, and was tightly coiled. It was almost perfectly protected by cryptic coloration in this particular environment. It appeared very indifferent to us, and gave no warning except to protrude the tongue, and made no effort to escape. It was therefore an easy matter for one of the men to secure its head with a forked stick while another grasped it behind the "ears."

Since the "amphibian specialist" wished to preserve the specimen in good shape for the Yosemite Museum, it was decided to commit the rattler to death by sunlight. At 10:01 a. m. it was placed in an open

space, on a gravelly surface, and prevented from escaping. It rattled vigorously when aroused and irritated. After a few abortive attempts to strike at sticks it began to show signs of weakening and tried again to escape.

After 13 minutes of sunlight it rolled over once or twice, then righting itself it remained writhing somewhat for a few seconds before repeating the action. This it did four or five times. In 17½ minutes it was apparently dead, and remained belly upward, stretched full length. Then a reflex action in the head and about two inches of the body was observed, the mouth opening wide and showing the fangs and trachea very clearly. During this "post mortem" action, the fangs were relaxed, whereas they had been shown in rigid fighting position before. The mouth remained open wide. The body after 18 minutes of exposure to sunlight felt very warm to the touch. A swelling in the middle portion of the body indicated that the snake had recently fed. It bore seven rattles, the one nearest the body being almost black, and one button.





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Dan Anderson