

# YOSEMITE NATURE NOTES

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Badger Pass Ski Area

# Yosemite Nature Notes

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## THE RETURN OF THE CALIFORNIA GRAY SQUIRREL

By Ranger-Naturalist Ernest A. Payne

The last five years have brought a noticeable change in the number of California Gray Squirrels (*Sciurus griseus griseus*) in Yosemite Valley. One of the activities of the 1935 class of the Yosemite School of Field Natural History was to take a one day census of the deer, bears and gray squirrels on the valley floor. The deer and bears were found in large numbers but only two gray squirrels were reported and one of these was badly diseased. If a similar survey were undertaken now it is very evident that the results would be quite different.

In addition to the usual controlling factors such as predatory birds and carnivorous mammals which tend to maintain the rodent-predator balance, the population of California gray squirrels was alarmingly reduced by an epidemic which found ideal conditions for its spread during a period of squirrel abundance in many forest areas in California.

This particular scourge was an outbreak of a skin disease, mange or scabies caused by a mite of the genus *Notoedres*. During the course of the disease the head and neck

become scaly, sores appear on the body and there is a general loss of hair. As the mite continues its work in the skin complete debilitation takes place and death follows.

According to Dr. H. C. Bryant in California Fish and Game for April 1921, the disease first appeared among the squirrels on the Georgetown Ridge in the El Dorado National Forest in 1917. From that region the disease spread rapidly to most parts of the State. In 1920 official reports (California Fish and Game, January 1922) indicated that the animals in Shasta and Klamath National Forests had suffered heavily. The disease must have advanced with lightning-like swiftness for it was also in 1920 and 1921 that it reached Yosemite and ravaged the gray squirrels here. By 1926 the animals had been reduced almost to the point of extermination throughout the Yosemite area.

Following a period of several years during which the future of the gray squirrel in Yosemite seemed to be in a very precarious position, the population of this beautiful arboreal animal appears now

to be definitely on the increase. Although they are not so common as they were prior to the epidemic, they are frequently seen in all parts of the valley.



Sierra Chickaree

With the almost total disappearance of the gray squirrel in Yosemite there has occurred an interesting change in the distribution of another tree squirrel, the Sierra Chickaree (*Sciurus douglasii alboimbratus*) or red squirrel.

In reference to the normal distribution of these two rodents Grinnell and Storer (*Animal Life in Yosemite*, pages 196-203) state that "At the upper margin of the Transition Zone the range of the Gray Squirrel meets that of the Red Squirrel or Chickaree, a species of similar food habits; and the ensuing competition seems to be one of the factors operative in limiting the upward extension of the Gray Squirrels' range." Then again, "This species (the Chickaree) is not found

in the company of its relative, the Gray Squirrel, save where the ranges of the two overlap slightly on the west slope and in exceptional instances when the chickarees in numbers move down into the Transition Zone. . . . Occasional individuals are to be seen in Yosemite Valley."

The above observation was recorded before the epidemic had devastated the gray squirrel population.

For the perpetuation of any species of animal life the range occupied by that species must provide a shelter from enemies, a place in which to rear the young and a sufficient supply of proper food. If two species of similar needs are competing for the same limited range



California Gray Squirrel

it would seem logical to believe that one of two ultimate results would ensue, that is, one or the other of the contenders must give way in favor of the stronger or secondly, there may develop an ad-

justment between the two species with a limited number of each competing for the available suitable range.

At the present time the chickaree is one of the most commonly observed rodents in the valley and un-

doubtedly has the upper hand. Will it continue to dominate the situation or will the gray squirrel be able to win back its former territory? This situation offers a very practical study in animal ecology and its outcome will be watched with extreme interest.

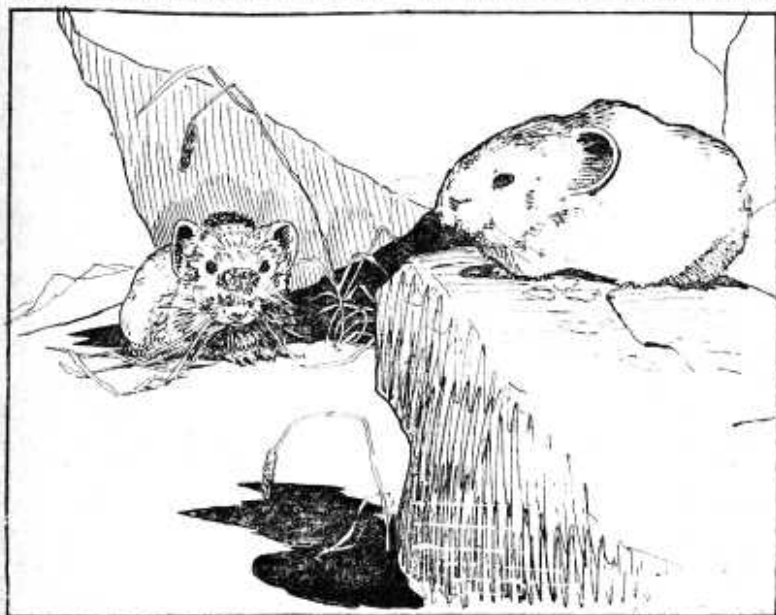
### THE LABORS OF A CONY

By Edward Butts, Field School '39

During bright, sunny days at high altitudes in the Sierra the pert and saucy little cony is as busy as a bee watching for intruders while preparing for the long winter. However, careful and quiet study is needed to fully observe this animal's activities.

One warm afternoon, August 5, 1939, feeling sleepy I decided to take a nap on a long talus slope below Summit Lake at an elevation of 10,600 feet. After dozing awhile, I was

awakened by several sharp squeaks of the cony which had evidently noticed me moving. I sat up cautiously and noticed a cony sitting up straight and intently watching for further movements. It evidently cannot see too plainly as it held its nose almost vertically into the air and sniffed in all directions. The wind favored me so that I sat for five minutes watching the cony. I was struck with the profile above its



nose as the front of its face showed distinctly the two angles of the head. Finally it darted over the rocks and disappeared for sixteen minutes after which it made fourteen quick trips carrying hay to its den. After that it disappeared for eighteen minutes, then came sixteen trips in rapid succession to the den. I gathered from this it would relay the hay up near the base of the rocks then quickly dash into the refuge with its food. This would be beneficial as an enemy waiting near its house might get it if it was too much in evidence.

During the four hours I watched its activities, it made four long trips foraging for food and then from eight to sixteen quick trips in one series to its burrow. Altogether forty-three loads were carried into its rock home.

I examined the hay pile carefully. Of one hundred and twelve pieces of vegetation, sixty-two were wil-

low tips, thirty-one phacelia flower heads, sixteen carex, one stem of *Lupinus longipes*, and two plants of Queen Anne's Lace. The willow was of the tender new foliage and was quite palatable to human taste. I tasted the phacelia seeds and was pleasantly reminded of soft young wheat grains.

A most interesting fact about this cony was that while it always entered its home from the same entrance, never once in four hours did it emerge from where it entered. A closer examination showed four exits. This is significant because its greatest enemy, the Red Fox, might await it where it disappeared. All its waste and droppings were outside near the exits.

The cony is remarkably quick and agile. It reveals countless instincts in escaping enemies, living in inaccessible places, and storing food for the long winter.

### THREE SPECIES OF NUTHATCHES SEEN TOGETHER

By C. A. Harwell, Park Naturalist

Mrs. Junea Kelly, President of the Audubon Association of the Pacific reported the observation of seeing two Pygmy Nuthatches and hearing several others on the Illilouette Fall Trail just below Glacier Point on September 6, 1939. They were plainly seen to forage on Jeffrey Pine cones, and on branches of a standing dead tree. At the same spot she heard and saw Slender-billed and Red-breasted Nuthatches. Observa-

tions of Pygmy Nuthatches are uncommon in Yosemite, and to have

Red-breasted  
Nuthatch



all three possible species present at once was unusual indeed.

## FOOD AND FEEDING HABITS OF THE SIERRA NEVADA ROSY FINCH

By Vincent Mowbray, Field School 1939

During the high trip of the 1939 class of the Yosemite School of Field Natural History, several observations were made on the food and feeding habits of the Sierra Nevada Rosy Finch (*Leucosticte tephrocotis dawsoni* Grinnell) as follows.

July 30. At the small lake in the cirque to the south of Lower McCabe Lake, elevation 10,500 feet, the class observed at least eight rosy finches near a snow bank which appeared to be "flycatching." On August 1, George Petrides found at least 50 individuals of this species at this point and they, also, appeared to be catching insects. On August 2, however, Vera Moncrief and the writer found that there were only two birds in this vicinity. It was later suggested by Dr. Robert Usinger that this increase in numbers might possibly have been correlated with the emergence of the Mayfly larvae which he had found to be extremely common in the lake on July 30 but which were very scarce there on August 2.

July 30. On the talus slope at the south side of Lower McCabe Lake, elevation 10,200 feet, Betty Hone observed one individual feeding on the heads of Pussy Paws (*Calyptridium umbellatum* (Torr.) Greene).

July 31. On the talus slope at the south side of Shepherd Crest, elevation 11,800 feet, Vera Moncrief, James E. Cole and the writer observed a bird feeding in "goldfinch

fashion" on the disk flowers of *Hulsea algida*. This bird would hop up from a rock to the flower head and as the head sagged down it would pick off a number of the disk flowers and hop to the rock with them in its beak. Here it would remove the ovary of the flower leaving the rest of it on the rock. This rock was found, on closer examination, to be covered with the remnants of many of the disk flowers. It is also interesting to note that though there were several flower heads in that particular group only one of them had been used by this bird.

August 2. On the talus slope at the southwest side of Sheep Peak, elevation 11,000 feet, Vera Moncrief and the writer observed one bird feeding on the matured seeds of *Arenaria nutallii*. It also appeared to be picking up objects from the sand on the slope.

August 5. On a grassy slope near the head of Virginia Canyon, elevation 10,000 feet, Vera Moncrief observed one individual feeding on the disk flowers of *Railardella scaposa*.

August 6. On the ridge between Soldier Lake and Spiller Canyon, elevation 10,600 feet, Betty Hone, Mr. Joseph Dixon, and Oscar Valentine observed between 15 and 20 individuals feeding avidly on the heads of *Eriogonum lobbii*. The birds were so busy feeding that they allowed the observers to approach within a few feet of them.

This is not meant to be a com-



plete report of the food of the Sierra Nevada Rosy Finch but it may serve as an indication of the types of food preferred by this species at this time of year.

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### **CEDAR WAXWINGS**

#### **Ranger-Naturalist Lowell Adams**

Bird students generally are acquainted with the habit of Cedar Waxwings (*Bombycilla cedrorum*) of exchanging food. As the birds gorge themselves on berries they seem to become surfeited and sit side by side on a limb. Then one picks a berry and, apparently too full to swallow it, passes it to its neighbor who may swallow the berry or pass it on in turn. On April 3, 1939, I observed this behavior in Yosemite Valley. But on this occasion the exchange of food was accompanied by a sort of activity new to me. To quote from field notes describing two waxwings perched near each other in a black oak tree: "One hops sideways to side of second, then away again about six inches, then back in quick, rapidly successive jumps. Then second touches bill of first. One even sticks bill inside other's bill." Other pairs were performing similarly nearby. Two were doing the sideways hopping toward and away from each other when a third waxwing flew to the limb between them and started to hop with the one on its left. The bird that had been thus cut out of the program sat quietly on the branch. The two that were hopping apparently had bits of

something in their bills. As they stopped hopping and perched side by side, their bodies touching, they turned their heads and their bills met. But so far as I could see there was no exchange of the material in the bills.

As I watched these maneuvers between several sets of birds I was able to make a few tentative generalizations. Usually only one bird hopped at a time, but sometimes both hopped at once. The one that did not hop seemed to be the one which took the initiative in proffering its bill. Sometimes I could see something in the proffered bill, sometimes I couldn't. The birds were apparently eating the bursting buds of the California Black Oak (*Quercus kelloggii*).

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### **RED FIR AT HIGH ELEVATION**

**By Vincent Mowbray,**

**Yosemite Field School, 1939**

While camping near the head of Virginia Canyon at an elevation of 10,000 feet I was quite surprised to notice a small Red Fir (*Abies magnifica*) growing in close association with White-bark Pines. This tree was about eighteen inches in height and was growing under a very large White-bark Pine which seemed to be in a position to protect it from the winds which blow down the canyon. This is evidently a new elevation record for Yosemite National Park as Red Fir seldom grows above 9,000 feet.

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## A RECENT DEVELOPMENT IN FISH PLANTING PRACTICES

By Ranger-Naturalist Harold E. Perry

The whole story of fish culture, from the stripping of eggs and mill to the actual planting of small fry, is one of great care and precaution. Carelessness at any point along the way might easily result in great mortality.

One of the crucial stages in the last chapter of the fascinating story of fish culture is reached during the journey to the planting area. The automobile truck in which most of the journey is ordinarily made carries a number of fish planting cans, each of which holds from one thousand to three thousand trout. Since much of the trip frequently is made over smooth highways, the problem of proper aeration of the water is a pertinent one. As long as the small trout lie inactively in the water at the bottom of the cans, a sufficient amount of oxygen is present in the water. Should the trout seek the surface of the water, a danger signal is evident and additional aeration is demanded. This has been accomplished heretofore either by rocking the truck rather violently or by lifting a quantity of water from each can in a special type of container which permits the water to fall back in a number of small streams, the effect in either case being to add oxygen to the water.

During the past year, the California Fish and Game Commission has been experimenting with various mechanical devices for aerating the water in fish planting cans. In one

experiment, an oxygen tank was used to release oxygen in the water at the bottom of each can. Then someone else experimented with an air pump run in one instance off the fan belt of the truck motor, and in another, by a small electric motor connected with the truck storage battery.

Descriptions of these experiments were presented at the Bureau of Fish Conservation Convention held in Sacramento, December 12, 1938, and as an outcome the California Fish and Game Commission has adopted the technique used in the last mentioned experiment.



Yosemite Fish Hatchery and Pool

California Fish and Game Commission fish planting trucks are now equipped with a small air pump powered by an electric motor connected to the storage battery of the truck. A separate little air hose for each fish planting can leads off from the pump and attached to the end of each hose is a piece of carborundum about one and one-half inches square which serves as a weight to



hold the hose down to the bottom of the water and through the pores of which air is released in many tiny streams to serve the needs of the trout during their journey to the planting area.

The Government fish planting truck in Yosemite has been similarly equipped recently as an assistance

to those whose responsibility it is to stock Yosemite streams and lakes with fish. Thus a definite improvement in fish planting technique has been achieved and another link strengthened in the chain of activities necessary for keeping Yosemite a fisherman's paradise.

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### CAMERA WALKS

By Ranger-Naturalist Charles W. Schwartz

This is the first year the Naturalist Staff has sponsored Camera Walks in Yosemite. We knew the idea had proved very popular in Crater Lake National Park. They proved very popular here as shown by the number of visitors participating. The largest number on a camera walk was 45, while the smallest was 10. However, the average attendance was around 25. These walks were scheduled once or twice a week and started at different points in the valley so that more photographic subjects could be reached. Because the light was different in morning and afternoon, the same territory could be covered at these two times with entirely different results.

The object of these walks was not to photograph everything in the valley at once, but to study some particular subject, for example Half Dome, and see how many different views were possible, then to study these various views and select the ones with the best composition. With

an emphasis on selection and composition, a view is changed from a snap-shot to an artistic photograph.

Enthusiasm ran high in these camera groups. Many beginners with new cameras were initiated into their use, intermediate class photographers were stimulated to improve and advanced cameramen compared notes on film, developers, papers, etc. Since everyone in the group had a common interest, this was a basis for getting acquainted and many fine friendships were formed. In fact the groups usually considered one walk was not enough and arranged special meetings a few days later to compare pictures and things they forgot to discuss at the previous walk. These follow-up meetings were advantageous both to the Naturalist and to the group as help in photography not only consists of advising about composition but analyzing the result with suggestions for improvement.

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Dan Anderson