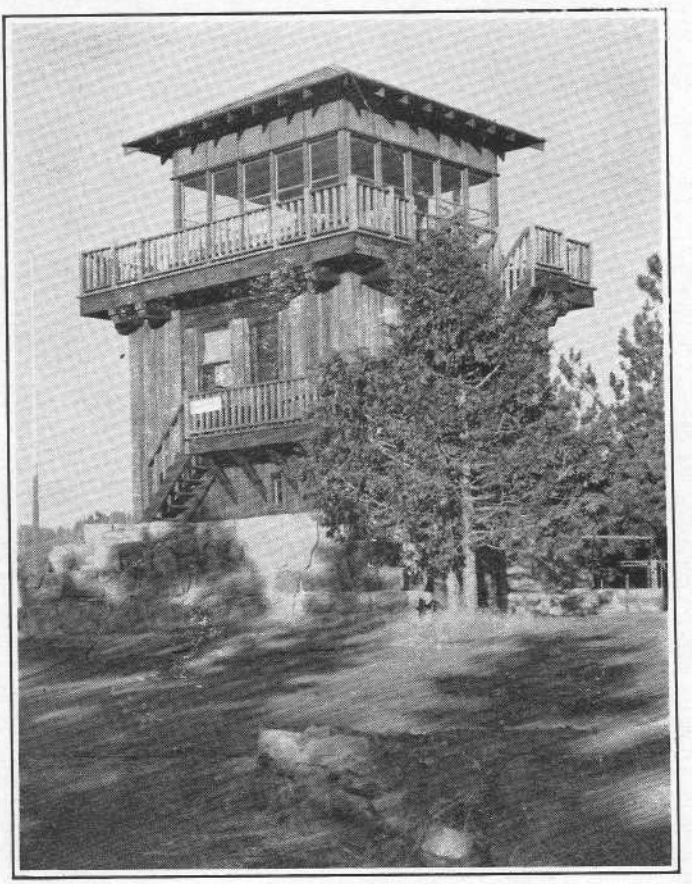
YOSEMITE NATURE NOTES

Vol. XXIV May, 1945 No. 5



Henness Ridge Fire Lookout

Yosemite Nature Notes

THE MONTHLY PUBLICATION OF
THE YOSEMITE NATURALIST DEPARTMENT
AND THE YOSEMITE NATURAL HISTORY ASSOCIATION

F. A. Kittredge, Superintendent — C. F. Brockman, Park Naturalist

M. V. Walker, Associate Park Naturalist

VOL. XXIV — MAY, 1945 — NO.5

FOREST FIRE PREVENTION

By L. F. Cook—Asst. Chief Forester

The protection of the national parks from fire is recognized as one of the major responsibilities of the National Park Service. With the progressive destruction and modification of the virgin forests of the United States through lumbering, fire and other causes, the examples of these primitive stands conserved within the national parks and monuments becomes of increasing importance. Intensive protection from fire is essential if the areas entrusted to our care are to be administered so as to "provide for the enjoyment of the same in such manner and by such means as will leave them unimpared for the enjoyment of future generations." Although the vegetation was not the primary reason for establishing most parks and monuments, except those areas that contain sequoias, or other unusually large or rare species, the vegetation is of immeasurable importance to scenic and inspirational values.

If park forests are to be preserved for the benefit and enjoyment of future generations, it seems obvious that they must be given adequate protection against the forest's three major enemies—fire, insects and disease.

Some observers have been concerned about the effects of complete exclusion of fire from areas in the parks. They point out that fire has, in the past, played an important role in shaping the composition and character of much of our native wild land vegetation. It will undoubtedly continue to be a major factor in the foreseeable future. Even if all preventable man-caused fires could be excluded, lightning fires which are caused by natural processes will continue to occur. Complete exclusion of fire in some areas may result in the development of large accumulations of fuels while the vegetation develops through brush or other successional type to the final climax type. It is argued, with sound logic, that occasional fires of small size or low intensity restrict the development of large quantities of fuels and undesirable species, and reduce the threat of completely destructive fires.

Careful study and observation in-

dicates that any fire, regardless of its intensity, delays, or may even prevent, the development or continuance of the much to be desired and rare climax type. The successional

stages of vegetation are necessary to condition the soil and ground cover for the development of climax types. In the intensively used areas even small fires may cause disproportionately high damage because of the importance of individual trees. However, complete fire exclusion is still an academic subject because fire is an actual and ever-present threat to the vegetation of the park areas. We are still far from that happy condition where our vegetation is safe from sudden destruction by fire. Vigilance cannot be relaxed. It is the established policy of the National Park Service that every man-caused fire shall be prevented if possible, and every fire that does start shall be reached and extinguished as quickly as possible, whether man-caused or lightning, and whether originating in a developed section or in a wilderness area.

During the past 15 years Yosemite National Park has had 228 lightning fires and 324 man-caused fires within its boundaries which have burned over a total of 4,200 acres. Compared with other similar areas of rugged topography, climate and intensive human use this is a relatively good record, but each one of these fires **could** have been a disaster of major proportions, and each one was a threat in itself, regardless of where it occurred. Lightning fires will always occur and cannot be prevented. To guard against such instances, preparedness must be directed toward prompt detection, and rapid, efficient control to prevent their spread. Positive action can, however, be taken to reduce the number of man-caused fires to a minimum.

For many years the National Park Service and all other conservation agencies have conducted intensive campaigns of public education and warning concerning the losses re-

sulting from carelessness with fire. Admonitions, reminders and instructions regarding care with fire are conspicuously posted and orally expressed at most places where fires might be started. Facilities are provided for safe building of campfires. Most automobiles have receptacles for discarding smoking materials. Fire hazard reduction has been undertaken where danger seemed greatest. Few people are today unaware of the great losses resulting from carelessness with fire, and it is a rare individual who has not received some instruction in the prevention of forest fires. However, despite all of these precautions, each year we have about the same number of man-caused fires. Something seems to be lacking on our approach to this serious problem.

A study of the records of past fires, especially regarding who was responsible, why, and under what circumstances, indicates that while most people are aware of the need for care with fire, there are a great many who either do not actually know how to use fire, forget their training, or do not appreciate the possible consequences of a moment's thoughtless act.

City habits are not quickly abandoned in the woods. Many of the things that we are accustomed to doing may produce dangerous effects; for example, a lighted cigarette may be flipped onto the pavement in a city with comparative safety, but the same act, even in the developed areas of parks, may cause a serious

fire.

Investigations of many of the fires that get away reveal that superficial attempts were made to put them out.

In other cases fires were left burning in what may appear to have been a safe spot. These things indicate that the fire user was vaguely aware of the hazard but not sufficiently impressed with the necessity of taking adequate precautions; perhaps a few moments of precious limited vacation time were required to make sure the last spark was out; it might have been inconvenient to safely dispose of the burning material; or the duff appeared innocently fireproof. Even the experienced woodsman may take only perfunctory steps to extinguish his fire inasmuch as he is quite sure that he, personally, has never been responsible for "the fire that got away."

Those of us who have observed the numbers of cigarettes thrown from speeding cars, unextinguished campfires, and other evidences of carelessness with fire, marvel more at the small number which actually cause fires than over the fact that the national parks only have about 200 man-caused fires each year.

The great majority of people who visit national parks are aware of the need for care with fire but must be continually reminded that they personally have a responsibility to exercise proper precautions. Posters and oral reminders help to do this. In addition and perhaps more important seems to be the need for furnishing specific instructions regarding just **how** to be careful and **what** to do to be sure that every spark is dead out. Emphasis is needed regarding good manners in the forest and the development of a forest fire safety consciousness. Forming the habit of observing the following simple rules is the sign of a good woodsman and would do much to eliminate the threat of fire in the parks:

1. Break your match in two before discarding it.

2. Use ash receptacles for discarding smoking materials, or if none are available be sure that it is deposited in a fireproof spot. Smoke only where it is safe and permitted. It is desirable to stop while smoking in hazardous areas.

3. Camp in safe places. Camp sites are designated in the parks. Build small campfires away from the bases of trees, and only after clearing away the duff down to mineral soil. Before leaving the site, even for a few moments, be sure your fire is dead out by using water or mineral soil and stirring the coals to extinguish the last spark.

4. Never burn debris in windy weather. Keep the fire small and in a safe place. Extinguish it completely. Watch it continuously until you are sure it is dead out.

5. If you discover a fire, report it at the earliest possible moment to any employee.

Observe the same precautions in your parks regarding fire that you would in your own home and there will be far fewer fires.

Illustrations used in the foregoing article by courtesy of American Forests Magazine.

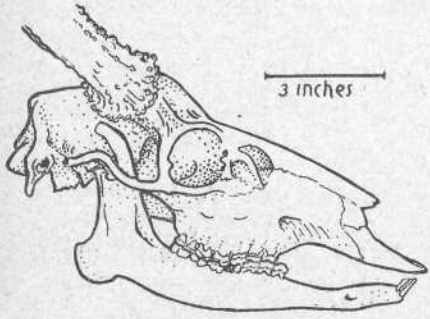
FOOD HABITS OF YOSEMITE MAMMALS AS INDICATED BY THEIR TEETH

By Lt. (jg) Richard G. Miller

PART IV

Even-toed Hoofed Mammals (Artiodactylla

The deer differ greatly from other Yosemite mammals. In the mouth they are as peculiar as are some of the other grass and leaf eaters. They have no front teeth in the upper jaw and no canine teeth at all. But they



Mule Deer YMNH #418

$\frac{0}{4}\ \frac{0}{0}\ \frac{3}{3}\ \frac{3}{3} = 32$

do well with the eight front teeth that they do have, using them to grip vegetation against toothless upper "plate" and lips, and then with a jerk of the head wrenching the mouthful loose from the plant. This greenery goes into the back part of the mouth where it is ground between large, broad-crowned molars by a circular motion of the lower jaw. The food goes from here to the rumen, a compartment of the stomach which is set aside as a storage room, and there remains in a semi-masticated condition until the deer is through foraging and has time to give it further attention.

During the heat of the day most Yosemite deer retire to the shelter of the forest, and during this period of rest they call forth the stored food a cud at a time, chew upon it some more and swallow it again. This time the food bypasses the rumen and goes to the business part of the stomach for digestion.

Although they eat grass and other perennials and annuals as well as shrubs, deer do not graze systematically as do sheep. Instead, when eating ground cover or foliage of shrubs and trees, they browse, taking a bit here and a bit there, covering an area selectively and leaving no noticeable denudation at one passing. Such feeding allows for frequent return over the same ground. It explains how deer may be seen night after night foraging over the same vegetation, as they did on our "lawn" shrubbery at the Crane Flat Ranger Station. However, in the long run, an overabundance of deer will affect the character and abundance of vegetation. This is shown in a few test plots on the floor of Yosemite Valley which are protected from deer. In many cases foliage of the same plants within the fenced inclosures is found to be very prolific and only moderately abundant im-

mediately outside where deer had browsed.

Deer feed on manzanita, deerbrush, grasses, acorns, staghorn lichens and many other plants.

The only other hoofed herbivore which was originally native to the Yosemite region is now gone. It was the Sierra Nevada mountain sheep (Ovis canadensis sierrae). Excessive kill by early hunters and miners seeking food and sport has left only a small band of these great Sierra mountaineers. This band ranges the peaks of the Inyo National Forest, some distance south of Yosemite, under watchful protection of the U.S. Forest Service.

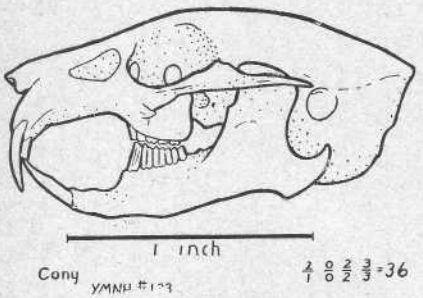
The mountain sheep, like the deer, has no canines, or upper incisors. Though it browses to some extent, the greater part of its food comes from grasses, wildflowers, and other tender plants of the high meadows and peaks.

In this connection it is of interest to call attention again to the very interesting discovery of a mummified mountain sheep found October 4, 1933 on the Lyell Glacier by C. A. Harwell and M. E. Beatty who were at that time respectively, Park Naturalist and Assistant Park Naturalist of Yosemite National Park. This interesting find was made during the annual survey of the Lyell Glacier. That it is a noteworthy event is indicated by the fact that mountain sheep had been extinct in the Yosemite area for at least 50 years. Naturally, it generated considerable scientific interest. Investigations that were made indicated that the animal had been killed by a fall into the open bergschrund (large crevasse near the head of the glacier) from the headwall of the glacier on the north face of the mountain, and had been entombed in the ice for a period of from 50 to 250 years. The specimen is now displayed in the Yosemite Museum. Yosemite Nature Notes for December 1933 and March 1938 give more complete data on this subject.

Hares, Rabbits and Pikas (Lagomorpha)

The little Yosemite pika or cony, though is seems to resemble a rodent, is actually more closely related to the hares and rabbits. This re-

lationship is somewhat apparent in the short compact body, hunched posture, large rounded ears, and absence of a visible tail, but the true relationship can be traced best in the



presence of the typical rabbit-like teeth. Rabbits, hares and pikas are grouped together because they posess a second and smaller pair of incisor teeth located just behind the large front pair (see illustration). These are not noticed in the outward appearance of the animals, and so we seldom think of them as creatures distinct from the rodent group.

The food and habits of conys are somewhat rodent-like. Vegetation is harvested with the front, or cutting, teeth, and stored into hay piles for future consumption. When feeding, the cony grinds the plant material between his back teeth, the molars. No flesh-cutting teeth are present, and little or no meat enters into the diet of the cony.

Travellers on the high crests above 7,500 feet sometimes come upon the piles of curing hay, which represent the results of the cony's summer occupation and winter food supply. Usually made in a crevice or under a rock, such a hay pile may contain as much as three bushels of material. A few stacks analyzed were found to contain Spiraea, Monardella, Bryanthus, Phlox, Senecio, Eriophylum, grasses, moss, willow tips, Phacelia heads, Carex, lupine, and Carum. It would seem that a large portion of the vegetation available is acceptable to the cony, and he does not have to be very selective in foraging. This is good, for the twelve and thirteen thousand foot peaks which he inhabits are covered with snow most of the year and afford only six to eight weeks in which to put up a supply large enough to last through the other ten months. Quantity, rather than quality, of necessity, is his standard.

Another lagomorph, the Sierra Nevada white-tailed jack rabbit, commonly known as the snowshoe rabbit, is sometimes seen in the high country. It lives on the foliage, twigs and bark of shrubs and other plants. With heavily furred feet, serving as snow shoes, it is equipped to forage abroad over the snow better than a cony and does not need to store hay.

No other close relative of the cony is present within Yosemite National Park boundaries, but the black-tailed jack rabbit and Mariposa brush rabbit and two species of cottontail rabbits occur in the foothills less than 50 miles away.