

# YOSEMITE NATURE NOTES

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Skiing on Horse Ridge

# Yosemite Nature Notes

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THE YOSEMITE NATURALIST DEPARTMENT  
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## PERMANENT BIRD RESIDENTS LEAVE YOSEMITE VALLEY

By M. E. Beatty, Associate Park Naturalist

For the first time during the twenty year period bird observations have been recorded at the Yosemite Museum, several species of permanent residents are almost impossible to find. The Blue-fronted Jay is one of Yosemite's best known birds and also one of the commonest. All year round their raucous call may be

heard from early morning on throughout the daylight hours. But now they have seemingly moved out en masse for parts unknown. cially, and they, too, for the most part, have deserted the Valley. Although classed as a summer visitant, the Western Robin may usually be found in small numbers throughout the winter season, particularly around the government Post-Office, where they are fed tidbits by employees. However, they, too, are conspicuous by their absence.



During periods in winter when stormy weather prevails, the bird population is fairly inactive and few individuals observed. This winter, however, has thus far been one of little precipitation and the days have been mainly sunny and clear. In spite of this favorable weather situation, bird life has been relatively scarce.

The most logical explanation for the apparent mass migration of the above named species is the total failure of the acorn crop for the last two years. We have often experienced a single year of acorn shortage followed the next year by a bounteous crop but this is the first time to our knowledge of two successive years of total acorn shortage.

The California Woodpecker is another of our permanent residents well known to winter visitors espe-

The California Woodpecker de-

pend largely upon the acorn for food and may usually be seen storing acorns in dead tree trunks and limbs. They probably store a sufficient number of acorns to carry them over a single year of acorn shortage, but two such years in succession would undoubtedly prove most discouraging. The Blue-fronted Jay likewise utilizes the acorn for food and commonly stores the surplus by burying them in the ground. It is unlikely that any of the acorns so stored would remain after two years, as they would have sprouted to form young oak seedlings. Thus food supply is apparently one of the major governing factors in the shifting of the permanent bird population.

It will be interesting to observe whether these missing individuals will find other areas more to their

liking from the standpoint of food supply and fail to return to the Val-



CALIFORNIA  
WOODPECKER

ley or whether they will return again in their usual numbers with the coming of our next good acorn crop.

### PIONEERS RETURN TO YOSEMITE

By C. Frank Brockman, Park Naturalist

Yosemite Valley is now the abode of two pioneers who can be considered literally as "natives" of this area. Mrs. Cosie Hutchings Mills, the second white child born in Yosemite National Park, (Oct. 5, 1857), returned to the scene of her childhood after an absence of 42 years in August, 1941. Following an extended tour of the west she again returned to the Valley and, since last summer she has been a familiar figure on the trails about the Valley floor.

Mr. Jack Leidig, who was born in Yosemite in 1874, is also numbered among the official residents of Yo-

osemite Valley at this time. Although he has made his home in the nearby town of Mariposa for many years and has visited the Valley on many occasions, he entered the employ of the Yosemite Park and Curry Co. as engineer in December, 1942.

Both Mrs. Mills and Mr. Leidig visit the museum whenever possible and at such times we are usually favored with interesting anecdotes of Yosemite's past which are not contained in the published records of the area. Recently a discussion of the early days turned to the question of holdups on the horse-drawn stage

routes to the Valley. Mrs. Mills recalled one amusing instance following such an event which happened on the old Wawona Road near the rim of the Valley many years ago. Following their arrival at the hotel many of the passengers, unnerved

from their experience, were mourning their losses. However, one lady from whom \$20.00 had been taken refused her fellow passenger's solicitations. "Twenty dollars?", she retorted, "Why, I wouldn't have missed it for a hundred!"

## ENVIRONMENTAL ADAPTATIONS OF SOME YOSEMITE PLANTS

By Ranger Naturalist Carl W. Sharsmith

### Part II

#### Adaptations Resulting from Biotic Interrelations

So far we have been concerned with plant adaptations due mainly to extreme physical conditions of the environment; in such cases many unrelated species from diverse plant groups, if growing under the same extreme environmental conditions, may meet the exacting requirements of their particular environment by developing similar adaptations. Such, for example, was shown to be the case with chaparral. The discussion now turns to plant adaptations due, not necessarily to the physical conditions of the environment, but to special biological conditions arising from the complex of interrelations between other plants and animals.

#### Saprophytes and Parasites

Saprophytes and parasites are striking examples of biological adaptations which are well exemplified by several Yosemite plants. Saprophytes utilize decaying plant material as a source of food, rather than by obtaining it through the usual synthesis of inorganic substances in the green leaf. They are generally if not always aided by an intermediary plant—a fungus—living on the surface or inside the roots of the saprophyte. This fungus breaks down dead plant material on the forest floor into soluble food substances which can be utilized by the host plant. The fungus undoubtedly also reciprocally benefits by the associa-

tion, but all we generally see is the non-green saprophyte, such as the



familiar, vivid red Snowplant, the tall, slender, spike-like stem of the

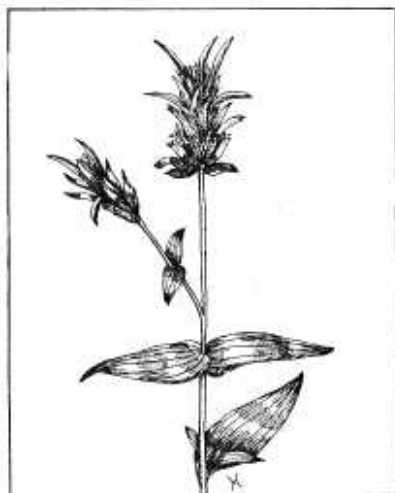
Pinedrops, with its pendulous bell-like flowers, or the pale waxen Austin Phantomorchid (*Cephalanthera austinae*). These plants belong to the two plant families of Yosemite which possess saprophytic representatives. The Snowplant and Pinedrops, and also the rarer Sugar Stick (*Allostropa*) and *Pleuricospora*, are representatives of the Heath Family (the same that produces the Manzanita). The Phantomorchid and also the Coralroot (*Corallorhiza*) are representatives of the Orchid Family.

Another biological adaptation is that of parasitism, the food source being derived from a living host rather than from dead plant material as in saprophytism. Note that the term "host" was here an ironic implication! Among Yosemite's parasitic flowering plants there are representatives of five families—Mistletoe (Mistletoe Family), Comandra (*Sandlewood* Family), Dodder (*Morning Glory* Family), Leafless

Paintbrush (Snapdragon or Figwort Family). All of these parasites possess roots modified into "suckers" which penetrate the host and rob it of water and nutrients. In some cases this parasitism is only partial, the parasite still possessing green leaves and thus earning at least part of an honest living. Such is the Mistletoe, Comandra, and Paintedcup. In the others, it is a case of "whole hog or none." When these complete parasites such as Leafless *Pyrola* and Bloomrape, are parasitic on roots, they look like saprophytes, being similarly devoid of green color and with the leaves reduced to inconspicuous "scale leaves."

### Pollination

Pollination is a necessary adjunct to the production of seeds, without which most plants would pass into limbo. The most common agents of pollination are wind and insects, but the inventions in flowers to insure pollen transfer to the right spot are endless in detail. Wind pollinated flowers, like those of pines, cottonwoods, and oaks, are greenish, small, and inconspicuous. The others, dependent upon insects for pollination, have developed bright colors primarily to attract the insects—"it pays to advertise." Thus the many wildflowers of Yosemite National Park are bright colored primarily for insects, and only incidentally (or rather accidentally!) for humans. The dependence upon insects is often narrowed down to insects active only at certain times, as with the magnificent Hooker Evening



*Pyrola* (Heath Family), Catilleja or Paintedcup—commonly known as

primrose (*Oenothera hookeri*) whose large yellow flowers are open all night. The spectacular evening opening of these flowers, and some



their insect visitors, have been beautifully described by Mrs. Enid Michael (*Yosemite Nature Notes*, April 1941)

### Insectivorous Plants

The unique adaptations by which some plants can utilize the bodies of insects as a source of nitrogenous material is seen in the Sundew (*Drosera*), a rare Yosemite plant which has been found at Swamp Lake. The upper surface of the small rounded, basal leaves are equipped with very sticky, bristly hairs to which insects stick—a sort of plant "tanglefoot." Shortly after an insect becomes stuck to one of the Sundew's leaves, the tentacles actually close in on the body like tentacles, and hold it fast, while digestive juices excreted by the leaf slowly convert the soft parts into absorbable food. After the "juices" are

drained, the now dry hairs of the leaf straighten out and the hard parts of the insect are blown away by the winds. Then the hairs become sticky again, ready to trap more insects.

Submerged in ponds of quiet water in Yosemite Valley, and elsewhere in the park at middle altitudes, is a more common insectivorous plant. This is the Bladderwort (*Utricularia*). Small bladders with a trap door at one end occur on the finely divided leaves. A trap is formed by a valve which only opens inwards into the bladder. Small crustaceans swim in, become trapped, and are then digested.

### Sphagnum

Sphagnum Moss is one of the rare plants of Yosemite National Park. It is a very special kind of moss—in fact, there is no other quite like it. Of all the scores of lake borders and boggy areas in the Hudsonian (timberline) zone which look equally suitable for its occurrence, it is found in but a few places in the park, such as around the margin of Cathedral and Elizabeth Lakes in the Tuolumne Meadows region. Here it forms occasional deep soft cushions, which if extensive enough (and dry, which it never is) would make the softest of beds upon which to spread one's sleeping bag. It is a branching moss of yellowish green color, easily recognized by the whitish dead parts. Notwithstanding its sparse development in the park, when one does meet it, it is sufficiently obvious to recall to mind the special peculi-



crities of Sphagnum. Also the beds of growth, though diminutive, enable one to picture the vast bogs formed by Sphagnum in more northerly regions where it exerts a very important influence on other vegetation, and where in the far north these bogs merge into muskeg and tundra.

An important adaptation in Sphagnum is its enormous water absorbing capacity. Due to peculiar large dead cells in the "leaves," which give the plant its characteristic pale green, or whitish (when dead) color, and which are usually equipped with pores, the plant can absorb ten to twenty times its own weight in water. A Sphagnum bed is therefore a very effective sponge. A further special feature is its capacity to absorb basic ions out of solution and thus create highly acid conditions in the bogs it forms. As a result where extensively developed as in more northern regions, Sphagnum bogs raise the water table, and by this fact alone kill off or alter the composition of neighboring forests. By their effect upon the water solution they also inhibit the growth of many plants, but encourage the growth of others capable of withstanding the extreme acid conditions. Thus Sphagnum has an important biotic influence upon its associated plants.

### DEER ANTLERS

By M. E. Beatty,

Associate Park Naturalist

One of the common questions asked by late winter visitors in Yo-

osemite is: "Where are the bucks? We see lots of deer around but they are all does." Actually they had been seeing deer of both sexes but failed to recognize the bucks inasmuch as they had already shed their antlers. Many visitors, there-



fore, learn firsthand that bucks shed and regrow their antlers each year. This is true of most members of the deer family which include the deer, elk, moose, reindeer or caribou. In the case of the reindeer or caribou, antlers are found on both sexes.

Possibly the next question that is asked is: "Why do they lose their antlers each year? It would seem that a tremendous amount of vitality and nutriment is expended needlessly each year in their regrowth. Why not a permanent set?"

This question is a difficult one to answer. Many theories have been advanced as to why the antlers are shed but none answer the question fully. Most people are satisfied

that they are shed and regrown annually in order to insure the male animal an undamaged pair with which to engage in physical combat with rivals for possession of the females during mating season.

The breeding season in Yosemite generally occurs in December and January, following which the antlers are shed. The majority of bucks drop their antlers in late January or in February, although individuals have at times been observed still with antlers as late as mid-March.

New antlers start growing in from two to four weeks time after shedding. By late May, the majority have antlers at least several inches long and by the end of summer they are usually fully developed. During this period of growth the antlers are in the "velvet" stage and are apparently quite sensitive to the touch. Care is taken to avoid striking them against any object. The so-called velvet is the name applied to the soft, and highly vascular, hairy skin which envelops and nourishes the antler during its period of rapid growth.

With the complete development of the antler, the velvet dries up and is freed from the bone by the buck rubbing and horning shrubs and saplings. They continue to polish their antlers long after the last bits of velvet have been removed, in fact, as long as they retain their antlers.

Normally, the size and number of

points on the antler increase with the age of the animal up to a certain point. Some people claim that the age of a buck can be determined by the number of tines or points on his antlers. No hard and fast rule can be laid down however, as there is great variation in antlers with age,



LAY PARK SERVICE PHOTO

even in the same individual. Yearlings usually produce spike or forked-horns and increase the number of points each year until four points develop, which is the regular number for an adult. Freak sets of antlers are not uncommon. After reaching full development a buck begins to decline and a reduction in the number of points often results.

Thus it is quite evident that antler growth and development is a secondary sex characteristic and is closely tied up with their physical perfection.







# MUSEUM NOTES

## MUSEUM ACCESSIONS

On December 17, 1942, the Yosemite Museum was fortunate in receiving, as a donation, an oak desk used by John Muir, the famous naturalist, in the preparation of the manuscripts for his numerous books from 1881 until the time of his death in 1914.

The donor is the son-in-law of John Muir—Mr. Thos. R. Hanna of Alhambra Valley, Martinez, California. In presenting this treasured memento to us he stated that he felt it naturally belonged in the area which was so closely associated with Muir's interests and activities. He suggested that the desk not be displayed merely as a museum piece but that it be used and, as it is in excellent condition, it will serve admirably in the museum library. Interested visitors may see it merely by requesting permission of the park naturalist.

In addition, Mr. Hanna also donated four excellent photographs of Yosemite. Two of these were by C. E. Watkins, famous photographer, who made many photographs of the Yosemite region and whose views of this area were especially popular

in the '60s. Mount Watkins, which is familiar to thousands of Yosemite visitors as the mountain reflected in the quiet surface of Mirror Lake, is named for him. CFB.

## N.P.S. SERVICE ROLL

The names of Park Ranger Harry R. During and Telephone Operator Dorothy Ballard should be added to the list of the permanent members of the Yosemite National Park Service Organization who have joined the armed forces. This list was published in the December, 1942, issue of Yosemite Nature Notes.

Since Harry During has been in charge of the campgrounds in Yosemite Valley for the past three years, and since he often assisted in the Park Service program at Camp 14, it is likely that many who have visited Yosemite will remember him and wish him good luck.

Dorothy Ballard, who as a telephone operator represents that portion of our organization who work entirely behind the scenes, has left to join the WAACS. CFB.





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Dan Anderson