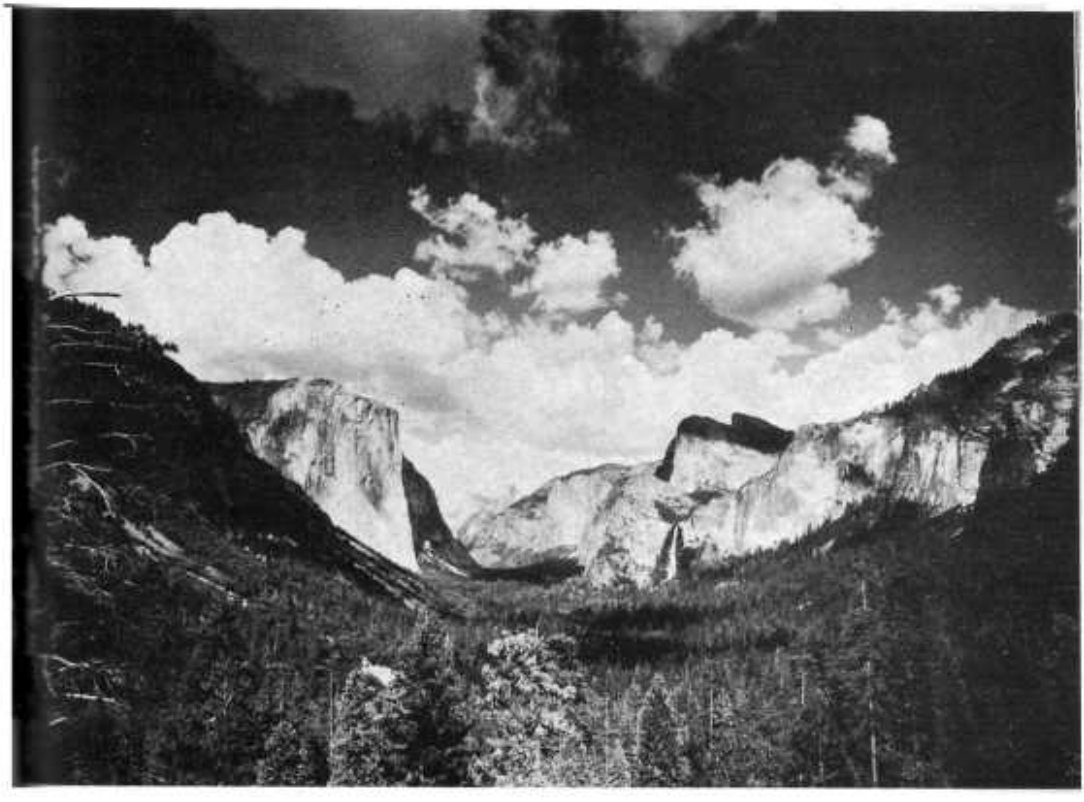
Guide to the

INSPIRATION POINT



NATURE TRAIL

YOSEMITE NATIONAL PARK

In cooperation with the National Park Service.

COVER: Yosemite Valley from Tunnel View.
OPPOSITE PAGE: Old photo by Walker and Fagersteen.
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YOSEMITE
Nature Notes

in its 37th year of public service. The monthly publication of Yosemite's park naturalists and the Yosemite Natural History Association.

John C. Preston, Superintendent
Robert F. Upton, Assoc. Park Naturalist
S. J. Zachwieja, Junior Park Naturalist

D. H. Hubbard, Park Naturalist
R. H. Sharp, Ass't. Park Naturalist
W. W. Dunmire, Park Naturalist Trainee

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INSPIRATION POINT SELF-GUIDING NATURE TRAIL

By Robert W. Carpenter,

Junior Park Naturalist

This trail has been planned for your enjoyment and to help you have a better understanding of some of the interesting features of Yosemite National Park. Using this leaflet and the numbered stakes along the trail will help you identify and learn some of the plants and geologic features of the area. The stakes are so separated as to give you periodic breathing spells. TAKE YOUR TIME. Remember that you are at an elevation of about 4500 feet. You will climb another 1000 feet to Inspiration Point. The round trip is about 2½ miles. Average hiking time is about 3 hours. Please stay on the trail. Taking shortcuts leads to erosion and damage to the landscape.

Tabuce shelling acorns, 1936.

1. Black Oak (*Quercus kelloggii*). The acorn of this common oak formed one of the staple foods for the Indians who once lived in Yosemite Valley. It is an important food for squirrels, deer, bear and some birds, especially the California acorn woodpeckers. This oak has typical lobed leaves which turn a bronze color in the autumn before dropping off.

2. The Wawona Tunnel. Looking over the ledge, you can see the entrance to the Wawona Tunnel which was built to prevent making a great scar on the cliff. The tunnel is 4,230 feet long, 28 feet wide and 19 feet in height. There is a five percent grade in the tunnel. All work was done from this end. Time of construction was from November 30, 1930 to April 13, 1933. Ventilation is accomplished by three nine-foot fans which operate automatically when the concentration of carbon monoxide from automobile exhaust becomes dangerous.

Starting the Wawona Tunnel, 1931.

3. Gates of the Valley. In the valley below, El Capitan and Cathedral Rocks may be seen, often called "The Gates of Yosemite Valley." El Capitan, on the left, rises 3000 vertical feet above the Valley floor and, in addition, has a 600 foot dome on top. It is reputed to be the largest single piece of exposed granite in the world. Cathedral Rocks on the right side of the Valley were once called the "Three Graces." These

The Gates of the Valley.

vertical cliffs were carved partially by water action and partially by glaciers, moving masses of ice, that filled the Valley nearly 1,000,000 years ago. Bridalveil Fall, on this side of Cathedral Rocks, drops 620 feet. The Indians called it "Pohono" meaning "puffing wind." The river and the glaciers cut the cliffs and left this "hanging valley." The creek drops off the sheer cliff instead of falling down a series of cascades.

4. Manzanita (*Arctostaphylos sp.*). The red-barked shrub with the rounded leaves is manzanita. There are two species in this area. The one with the dark green shiny leaves is the green-leaved manzanita (*Arctostaphylos patula*). The one with the grayish-green leaves is the Mariposa manzanita (*Arctostaphylos mariposa*). The name in Spanish means "little apple." The Indians made a kind of cider by crushing the fruit and dropping water through the pulp. You may see photographs of this process in the Yosemite Museum.

5. Fire. One of the worst enemies of the forest is fire. Trees that are not killed by fire will heal over burns that are not too large. The living part of the tree, a very thin layer beneath the bark, will grow out in all directions, eventually covering the wound. Trees weakened by fire are subject to attack by insects and fungus diseases.

Some fires are caused by lightning but many are caused by human carelessness. Please refrain from smoking while traveling on the Yosemite trails.

Firescars.

6. Ponderosa Pine (*Pinus ponderosa*). The large tree with yellowish-red bark broken up into large plates is the ponderosa pine commonly called the western yellow pine. It is one of the most important commercial pines in the West and is found in every state west of the Great Plains. Trees are not cut for commercial purposes in our National Parks but are left standing for their esthetic value, to be admired and enjoyed by thousands of people each day. The ponderosa pine bears needles in clusters of three. Note how the bark flakes off in little "jig-saw puzzle" pieces.

7. Incense-cedar (*Libocedrus decurrens*) and witches brooms. Not a true cedar, this tree with the flattened branchlets is called incense-cedar because of the fragrance of its leaves and wood. The leaves are actually tiny and scale-like, overlapping one another like shingles on a roof. The dense growth of small branches in some of these trees is called "witches broom." It is a reaction by the tree to an invasion of its tissues by mistletoe or perhaps a fungus.

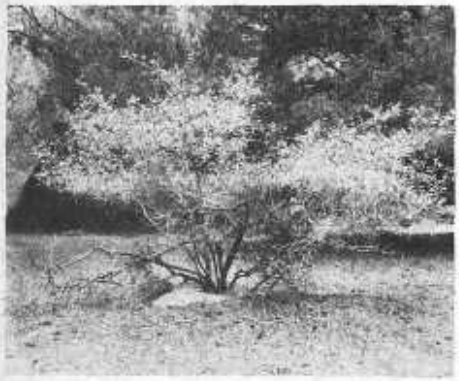
8. Canyon Live Oak (*Quercus chrysolepis*). The canyon live oak is an evergreen. Most of the leaves are smooth-edged; however, young trees and new growth on old trees have holly-like tooth-edged leaves. Can you find both types on this tree? It is also called a golden-cup oak because of the golden-colored cups which hold the acorns. Notice the clump of mistletoe overhead growing as a parasite in the oak.

Ponderosa Pines have distinctive bark.

The Sugar Pine's silhouette is distinctive.

9. Sugar Pine (*Pinus lambertiana*). This conifer has needles in groups of five. When mature it will develop cones as long as 15 or 20 inches. If fire burns into the heartwood, a white sugar-like substance forms, giving the name "sugar" pine to the tree. The sugar is sweet, slightly laxative and was used medicinally by the Indians who lived in Yosemite Valley. The needles are shorter than those of the ponderosa pine and are mostly in tufts toward the ends of the branchlets.

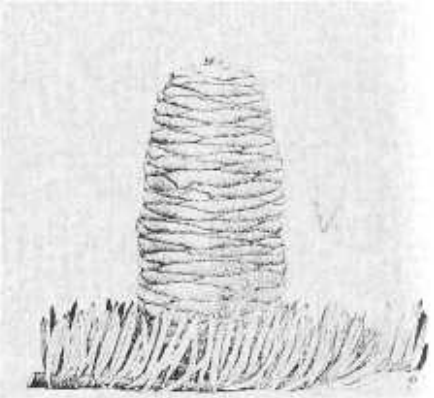
10. Deer Browse. In wintertime these shrubs form the most important food for deer when grasses and low plants are absent or covered with snow. Around you may be seen shrubs that look as though they have been trimmed. Many kinds of plants provide nourishment for deer. Among them are the mountain mahogany, deerbrush and buckbrush.



Deer browse-line on shrub.

11. Sword-fern (*Polystichum munitum*). This beautiful sword-fern is an evergreen and lends a touch of color to the ground cover during the dry season and the winter months. A short distance ahead on the left side of the trail are ferns that require more moisture than the tiny rock ferns. Ferns reproduce by spores; the spore cases may be seen as brownish spots on the undersides of the leaves.

12. White Fir (*Abies concolor*). *There are two species of true* fir trees in Yosemite — the red fir and the white fir. They differ from the pines by having their needles separate instead of in clusters. Note that the needles of this young white fir project horizontally from the branchlets. The bark of young trees and of new growth on old trees is white or silvery in appearance but in time becomes rough and broken by deep fissures. Cones on red and white firs grow upward on the ends of the branchlets. Pine cones grow downward.



—Sudworth

White Fir Cone and Needles.

13. Old Wawona Road. Here is part of the old Wawona Road built in 1875 and used until the new road and tunnel were completed. Our trail crosses the road here and continues up to Inspiration Point, a distance of about six-tenths of a mile and returns to this station via the old road. The metal trail signs that you see just ahead were made to replace the old wooden signs which were often chewed and clawed by bears.

14. Old Cabin Site. An old cabin, perhaps used by men taking care of the road, once stood here. You can still see the rocks of its fireplace. Since the old cabin disappeared, a new forest has grown up, hiding an excellent view of Yosemite Valley. Much of the meadow land in the Valley has become forested in the last 50 to 75 years. This is especially noticeable on old photographs.

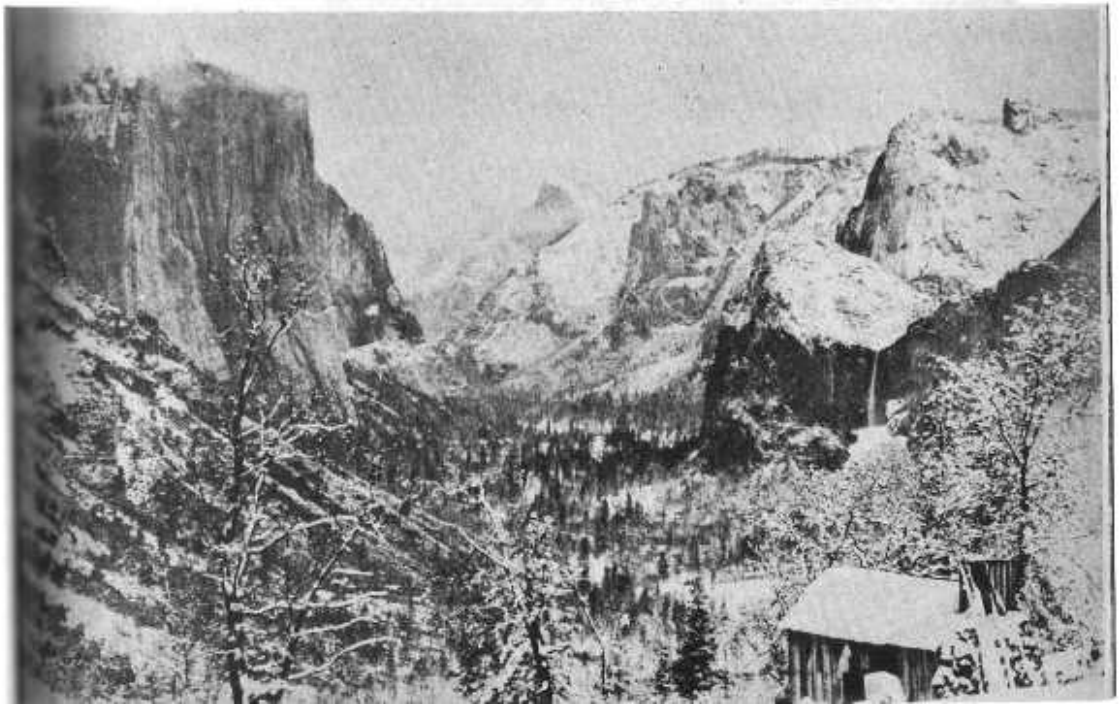
15. Water Pipe. This rusty old pipe may have been used as a water line to the old cabin below. It probably started from near the spring at Station 22 on this trail where you may stop to refresh yourself. There is very little rain in Yosemite in the summer time so most of the streams become dry by the middle of August.

16. Mosses and Lichens. Acids produced by mosses and lichens help form soil by breaking down rocks into tiny particles. As soil is formed through the centuries, more complex plants such as grasses and sedges are able to get a footing. Seeds from shrubs and trees then develop to complete the cycle of "plant succession." Lichens (pronounced lye-kens) are actually combinations of two plants - fungi and algae - living together. The alga provides the food and the fungus holds

—*Yosemite Museum*

Constructing the old Wawona Road.

The old maintenance cabin in winter. —*Fiske*

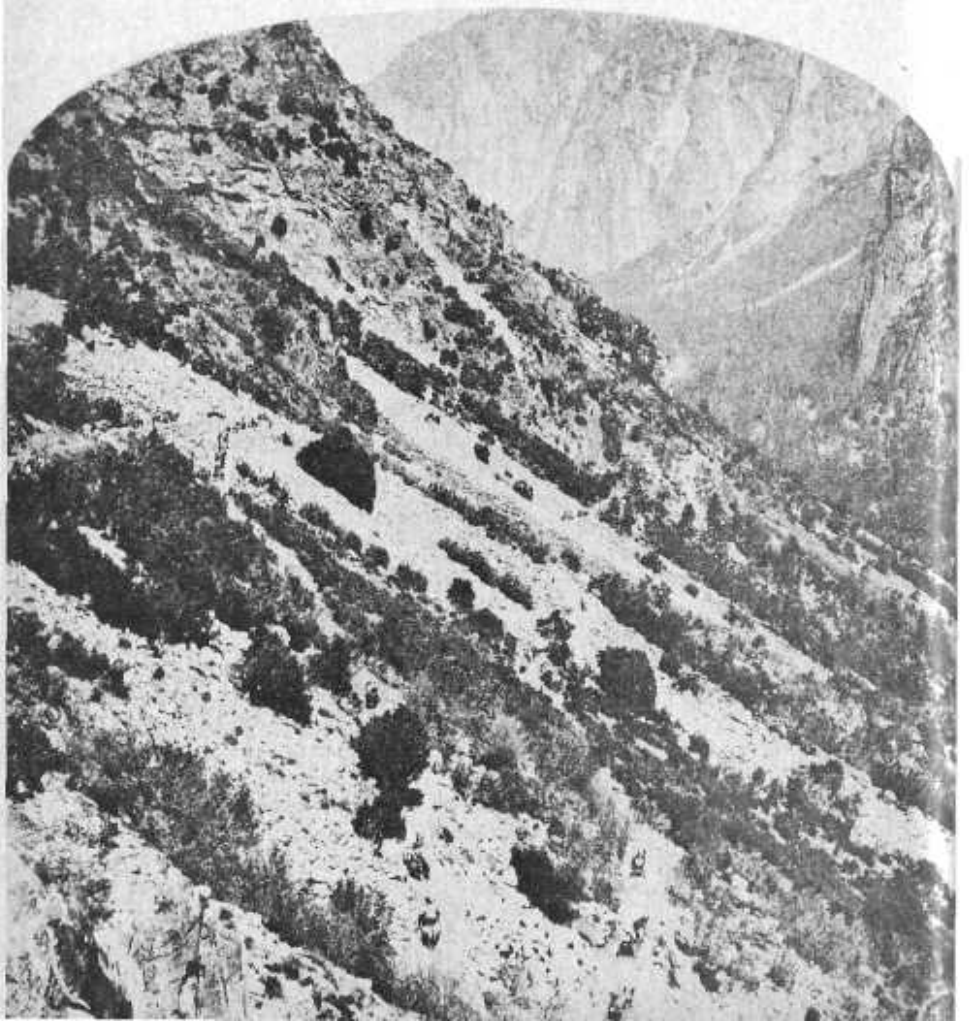


the mass together and retains moisture. Lichens are usually drier in appearance than the mosses. There are many different kinds of lichens. Many of the dark colored streaks on the cliffs in Yosemite Valley are actually lichen growths. How many kinds of lichen do you see near here?

17. Talus Slopes. Looking across the valley, you can see the slopes of loose rocks at the bases of the cliffs. These are called "talus" (tayless) slopes and were formed as rock breaking off the cliffs above piled up at a steep angle. This took place after the glaciers retreated from Yosemite Valley. If you look closely, you can see parts of the Old Big Oak Flat Road, built in 1874, stretching along about half-way up the talus. The Big Oak Flat Road (Highway 120) starts about a mile west of here.

Down the Talus Slopes into Yosemite Valley. Opening day, Big Oak Flat Road, 1874.

—*Yosemite Museum*



18. Staghorn Lichen (*Letharia vulpina*). The chartreuse colored moss-like growth on the trees in this vicinity is staghorn lichen. It is an epiphyte, or air plant. That is, it is using the tree just for support and is getting its nourishment chiefly from the air and sunlight. Staghorn lichen grows mostly on dead trees and on old bark of living trees. On three dead incense cedars in view from here, most of the lichen is growing on the south sides of the trees. The hot sun retards the lichen growth on the south side in the dry summer months. Don't rely on moss and lichen growth for compass directions when you are on a trail!

19. Life Zones. Many plants and animals are grouped into elevation belts or "life zones." Climate, which varies with elevation, is the principal cause of this grouping. Certain plants and animals adapt themselves to each climate. Many are found in only one life zone; others are found in several. When you started up this trail, you were in what is known as the Transition Zone, which reaches from 3500 to about 6500 feet elevation. A typical tree of this zone is the ponderosa pine. Here it is starting to be replaced by the Jeffrey pine found more typically in higher elevations in the Canadian Zone. The Jeffrey pine is also a three-needle pine but has larger cones than the ponderosa. The spines on the ends of the cone scales turn inward on the Jeffrey and outward into your hand on the ponderosa. Five life zones may be visited in crossing the Sierra in Yosemite National Park — the Upper Sonoran, Transition, Canadian, Hudsonian and, at the crest of the range, the Arctic-Alpine.

20. Life in a Dead Tree. Although this tree is dead, there is still a great deal of life in it. Ants, wood borers, bark beetles and other insects feed on and make their homes in the dead wood. Acorn woodpeckers, flickers, creepers, nuthatches, and other birds come to the tree in search of insects and to make holes for their nests. Owls, squirrels and raccoons may also make their homes here. Various species of fungi live on the tree, thus helping to decay the wood and return it to the soil. Bark beetles were probably responsible for killing this tree after it was weakened by being struck by lightning.

Bracket fungus on red fir.

21. Young Trees. The largest tree in this group is a Douglas-fir. Look for a cone on the ground. Notice that it has little three-pointed "bracts" projecting out from under the cone scales. While still attached to the tree, the cones hang downward, indicating that this is not a true fir. The branchlets have a characteristic drooping appearance. Notice that the needles are not in clusters like the pines and that they grow all around

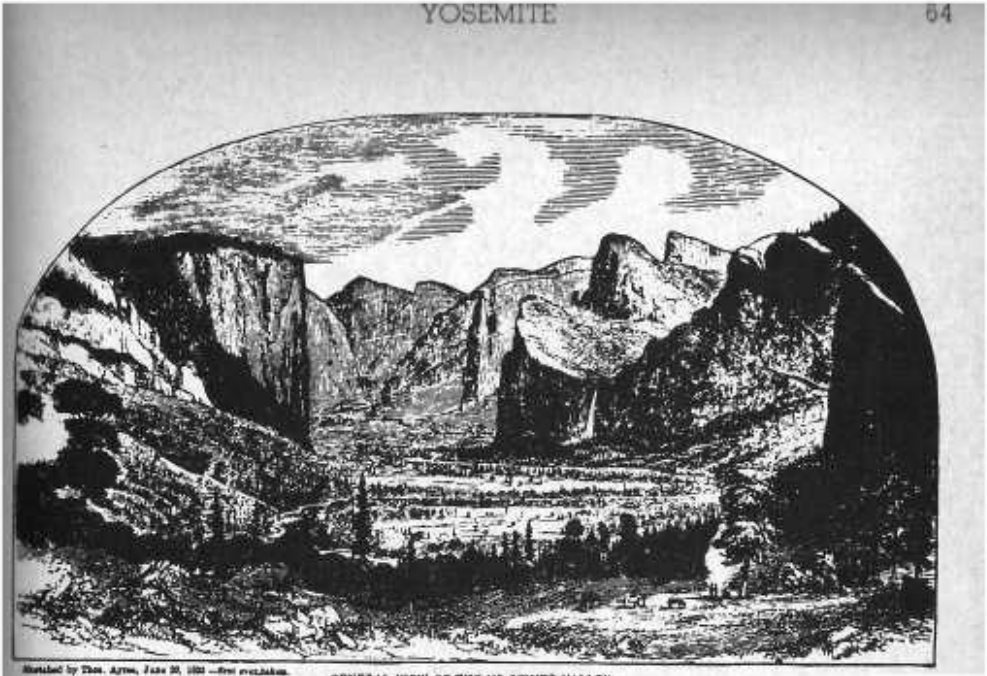
the twig, like bristles of a bottle brush. See if you can identify a young Douglas-fir, incense cedar, ponderosa pine, sugar pine and black oak.

22. Water. There is a spring about 75 feet straight ahead where you may wish to stop and refresh yourself. During the summer and fall months when most of this slope is dry, this spring is a favorite stopping place for many birds and mammals. Sparrows, chickadees, juncoes, kinglets and warblers may arrive in flocks in the daytime. At night, deer, raccoons, foxes, coyotes, and bear may stop at various times in their never-ending search for food. Azaleas bloom here in the early summer.

Pine beetle stuck in pitch on Ponderosa Pine tree.

23. Beetle-killed Tree. On this recently killed tree, you may see signs of the killers. If you look closely at the bark, you will notice many pin sized holes where bark beetles have entered to start a new life cycle by laying eggs just beneath the bark. Tunnels made by the larvae eventually encircle the tree. This prevents the sap from flowing and kills it. Some pitch tubes are present on the bark, indicating that the tree was alive when first attacked. One defense such plants have is to kill the invading beetles by drowning them in the sap. When infested trees, recognized by yellowish or brownish foliage, are spotted, they are normally cut down by insect control crews and the bark peeled and burned to kill the beetles. These particular insects will not live in a log or downed tree that has no bark. From this station follow the old road to the right.

24. Inspiration Point. The elevation here is 5391 feet above sea level. It was from near this point that Yosemite Valley was first seen by the Mariposa Battalion in 1851. Although the Valley may have been seen from the north rim in 1833 by a group of trappers coming from the east, it was first entered by the Mariposa Battalion. This group of miners was formed to attempt the capture of a band of Yosemite Indians who had been raiding trading posts near the town of Mariposa. Later on, Inspiration Point was also a stopping place for stagecoaches and later automobiles entering the Valley from Wawona. The passengers could get a much clearer view then because the trees were smaller and sparser. From here the trail follows the old road down to Station 13.



GENERAL VIEW OF THE YO SEMITE VALLEY.

First picture of Yosemite Valley, sketched by Thomas Ayres on June 20, 1855.

25. Natural Cultivation. As a tree is growing, its roots stretch out in all directions. The many root hairs tend to hold the soil particles together. When a tree falls, it often raises a large ball of earth with its roots as happened here. This helps loosen and aerate the soil making it easier for other plants to start their growth. Earthworms, certain beetles and other insects, some snakes, and lizards help to cultivate the soil. Can you think of any mammal cultivators?

26. Modern Highways. From this vista you may see the three highways entering Yosemite Valley. Directly below is the Wawona Road (Highway 41), which comes in from Fresno. At the bottom of the canyon is the All-Year Highway (140) from Merced, completed in 1926. Stretching up the opposite side of the canyon is the new Big Oak Flat Road which opened in 1940. It normally is closed from November to May, but, in the summertime, leads to Highway 120 which goes west toward Manteca and Sonora, California, and east over Tioga Pass to California Highway 395 at Lee Vining. Cascade Falls may be seen between the Big Oak Flat Road and the Merced Road.

27. Exfoliation. - Arches and Domes. The natural arch in the cliff directly across the valley and the dome on top of El Capitan are good examples of exfoliation. This is a type of weathering and erosion of the granite in layers to be seen in the exposed ledge on the opposite side of this old road. The fracturing of the granite together with expansion and contraction from freezing and thawing action leads to the shelling off, or exfoliation, of the rocks and the formation of talus slopes as painted out at Station 17.

28. Blister Rust Control. On the trunk of this tree is a metal section marker used in Blister Rust Control work. BRC crews periodically cover park areas in search of gooseberry and currant bushes, the hosts of the White Pine Blister Rust. When found, these bushes are removed, thus interrupting the cycle of life of the blister rust spores which travel from the bushes to the white and sugar pines. String is used to mark out lanes through which the crews work to assure that the area is thoroughly examined and no bushes overlooked.

Grubbing gooseberry bushes.

29. Insect Galls. The round balls on the branches of this live oak are galls caused by insects. Certain tiny wasps lay eggs on the branch. When the eggs hatch and the larvae begin to feed, galls appear. This is the tree's reaction to the attack of the wasp larvae. The larvae then live in the gall and continue their development. Large numbers of galls may cause young trees to become deformed.

30. Douglas-fir (*Pseudotsuga menziesii*). The large tree on the slope is a mature Douglas-fir. These trees were named for David Douglas, a Scottish botanist who came to this country in the 1820's to do collecting and research. He discovered and named several species of trees and plants; others were named in his honor. Notice how the roots of this tree have spread out over the rock ledge in search of water.

31. Grades and Brakes. Many sets of brakes were worn out by early day automobiles going down these grades before the new Wawona Road was opened. Stagecoach and freight drivers also had difficulty in holding back their teams and wagons when entering the Valley. Before the road was paved, great clouds of dust were raised as vehicles proceeded along the grade. The trip took many hours as compared to the relatively short time on the modern improved roads.

32. Huckleberry oak (*Quercus vaccinifolia*). The shrubs on the bank are huckleberry oaks, so named because of their low spreading form, similar to huckleberry bushes. The leaves are mostly smooth-edged and not toothed as on the canyon live oak. The huckleberry oak is an evergreen that may be found as high as 10,000 feet in elevation on warm south-facing slopes.

33. Mistletoe (*Phoradendron villosum*). Looking carefully at some of the black oak trees along here you will see clusters of mistletoe plants. They grow as parasites starting as sticky seeds left on the tree branch by birds or other means. As the seeds sprout, their roots penetrate the

branch and obtain food from the sap of the tree. A swelling usually results and a large number of mistletoe plants will eventually weaken and kill the tree. If the host dies, the mistletoe will die, too, because it does not have the ability to manufacture its own food.

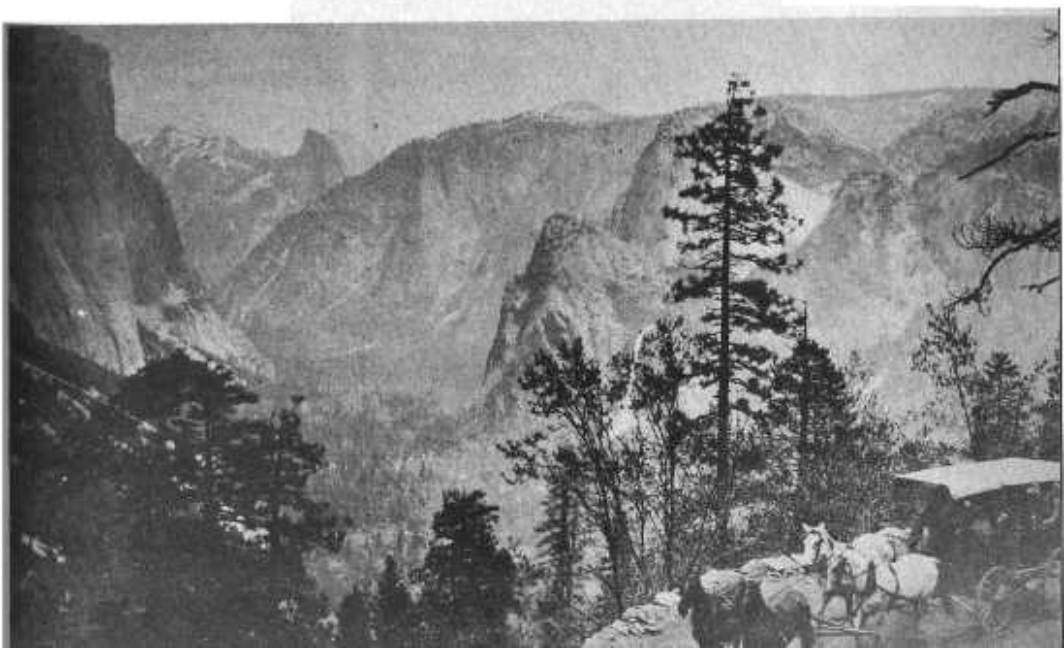
34. Telephone Cable. The cable running alongside the road is part of the new microwave dial telephone system that was installed in Yosemite in the spring of 1956. Previous to this time, the old crank style phones and miles of overhead wire were in use throughout the park. Short wave radio is also used for communication between park headquarters, ranger stations and patrol vehicles. In 1957, television "piped" in from Salinas, was added to the Valley communications.

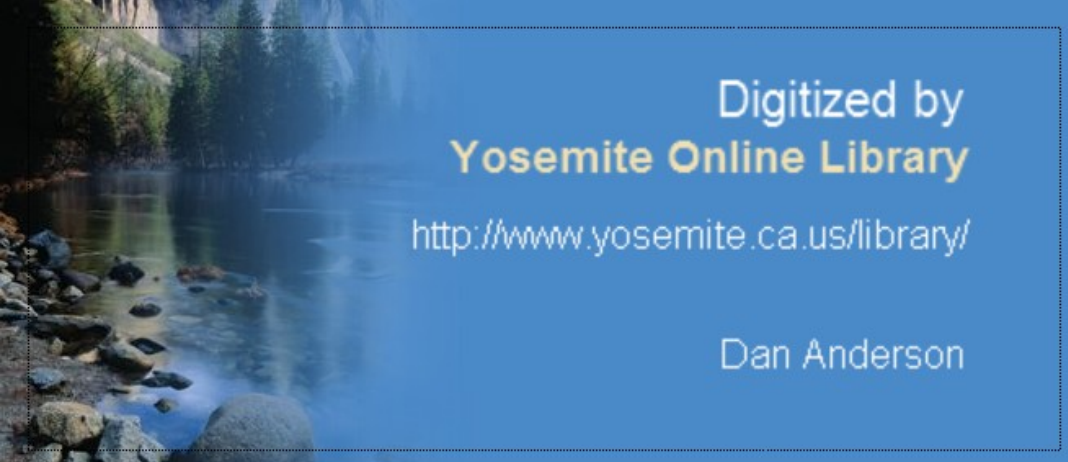
This is the last station. Don't forget to look for the place where the trail crosses the road at Station 13 leading back to the tunnel parking area.

We hope you have enjoyed your hike with us on the self-guiding trail. We are interested in your comments or suggestions for improvements. These may be given to any ranger-naturalist or at the Yosemite Museum in Yosemite Village. There you may also learn of the other activities provided for you by the National Park Service.

If you do not wish to keep this booklet, please return it to the box at the start of the trail so that others may see it.

Horse-drawn stage on the old Wawona road.

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