

# How to Preserve the Yosemite from Fire

**T**HE Yosemite National Park is in danger of being destroyed by fire. Owing to the accumulation of dead trees, decayed underwood and the excessive growth of underbrush the park is in an inflammable condition.

A spark caused by lightning, a smoldering fire, supposed to be put out by campers, can destroy the whole forest that has been growing for thousands of years. Very often thunderstorms occur in this region during the long dry season and many trees are struck by lightning. If the sparks happen to catch the accumulated mass of dry debris a forest fire would be immediately begun, and in a short time it would reach such a headway that it would be impossible to put it out before much damage would be done to the forest.

For years the forest has been accumulating underwood and when dead trees have fallen they have been allowed to remain and decay on the ground until the whole forest resembles one grand "jungle."

In places a person can hardly see over fifty yards on account of the superabundance of undergrowth, and hardly a distance can be traversed ten feet without encountering some fallen tree to climb over. In many places dead trees have fallen against magnificent live ones and are leaning against them for support. This would give the flames ample scope to lick the tops of gigantic trees. Under the conditions that exist after ten years of accumulation of dead trees and underbrush it will be impossible to much longer keep fire out of the great park.

It is bound to start in some way or another, and once under good headway it would sweep the park from end to end.

Yet by allowing the forest to get into this condition it is claimed that it is being preserved, when in reality no better means could be employed for destroying it. To make a fire every few years and destroy the underwood would be considered vandalism by some, and would never do under the present method adopted for the preservation of the forests.

An example of this would be to have a home in the country, surrounded by inflammable debris, and not insure it, but make it a fire for any one to make a fire in its vicinity. If a fire was once started nothing could save the house. This case is especially true with many houses and towns destroyed by fire last year in Michigan and Wisconsin. The adjacent country around these towns was filled with refuse matter left by sawmills, and by the sheer neglect of burning this dry waste material fires started and gained such control that towns and villages have been swept out of existence.

Many similar cases exist here in California, especially in the Sierra Nevada Mountains where large tracts of land

## Frequent Fires the Less the Damage.

By J. N. Le Conte, Instructor in Mechanics at the University of California and an Active Member of the Sierra Club.

**F**IRES in forests are like fires in cities, they must come some time. The longer they are put off the worse they will be. It is said the Indians formerly burned over the Yosemite every year. Whether this could be done now without destroying the standing timber I do not know, but it seems to me that the oftener a fire goes through a forest the less damage is done. If the fire is kept out year after year when it finally does come the destruction is great. This is the way with the Yosemite Park; should a fire break out there this summer, and it may come at any time, the destruction would be frightful.

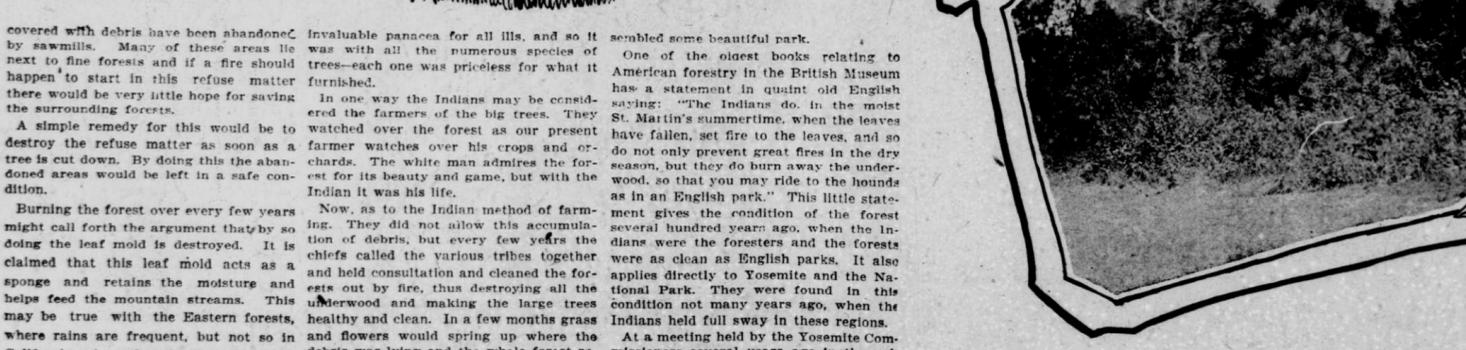
## Believes in a System of Rangers.

By C. J. Newhall, United States Forest Superintendent of Northern California.

**T**HE accumulation of dead trees and leaves in the Yosemite Park is, of course, a constant source of danger. The place is carefully patrolled by soldiers, but in general I do not believe them as efficient fire-fighters as the experienced rangers employed in the Government forest reserves.

There are three kinds of fires and they must be dealt with in different ways. The fire among the pine needles is not serious and can be stopped by back firing. When among the dead trees and brush the fire is more dangerous and requires harder work to back fire and clear out the debris in order to stop the flames. If the blaze gets in among the tree tops and there is a good wind blowing, but little can be done.

We have found the system of rangers as used by the Government very successful. Last summer over the four or five millions of acres in the northern reserves there were 106 fires reported and put out. There was no serious blaze.



covered with debris have been abandoned by sawmills. Many of these areas lie next to fine forests and if a fire should happen to start in this refuse matter there would be very little hope for saving the surrounding forests.

A simple remedy for this would be to destroy the refuse matter as soon as a tree is cut down. By doing this the abandoned areas would be left in a safe condition.

Burning the forest over every few years might call forth the argument that by so doing the leaf mold is destroyed. It is claimed that this leaf mold acts as a sponge and retains the moisture and helps feed the mountain streams. This may be true with the Eastern forests, where rains are frequent, but not so in California, where there is such a long dry spell. Many parts do not receive any rain for four or five months and during that time all the undergrowth and debris in the forest is in a parched condition.

In what condition did the white man first find the Yosemite? Was his sight marred by the superabundance of undergrowth? The valley was entirely free from underbrush and every portion of it could be distinctly seen. The floor resembled a huge green carpet, dotted everywhere with innumerable varieties of wild flowers. All the different species of trees presented a healthy and thriving appearance. No dead trees blemished the neatness of the scene.

Since this was before the white man, who were its protectors and how did they protect it to keep it in such an excellent condition? Nature's own children—the Indians—who had instilled into them through the laws of nature the true instincts of forestry. Had it not been for the Indians the Yosemite and the National Park would not be the beautiful country it is to-day. The Indians grew up in the forest; the forest was their home; they were part of the forest and they loved it with all the devotion of their souls. They not only loved the forest but looked upon it for their support; each tree was valuable to them in some way. The oak furnished them the staff of life, the acorn bread; the pine supplied the pinenut and sugar pine. The oily, nutritious substance found in the pinenut was as necessary to their systems as butter is to us, and the saccharine quality found in the sugar pine was also a very important essential. The fir provided the balsam, an

invaluable panacea for all ills, and so it was with all the numerous species of trees—each one was priceless for what it furnished.

In one way the Indians may be considered the farmers of the big trees. They watched over the forest as our present farmer watches over his crops and orchards. The white man admires the forest for its beauty and game, but with the Indian it was his life.

Now, as to the Indian method of farming. They did not allow this accumulation of debris, but every few years the chiefs called the various tribes together and held consultation and cleaned the forests out by fire, thus destroying all the underwood and making the large trees healthy and clean. In a few months grass and flowers would spring up where the debris was lying and the whole forest resembled some beautiful park.

One of the oldest books relating to American forestry in the British Museum has a statement in quaint old English saying: "The Indians do, in the month of St. Martin's summertime, when the leaves have fallen, set fire to the leaves, and so do not only prevent great fires in the dry season, but they do burn away the underwood, so that you may ride to the hounds as in an English park." This little statement gives the condition of the forest several hundred years ago, when the Indians were the foresters and the forests were as clean as English parks. It also applies directly to Yosemite and the National Park. They were found in this condition not many years ago, when the Indians held full sway in these regions.

At a meeting held by the Yosemite Commissioners several years ago in the valley an old Yosemite Indian, weather-beaten by many storms, dragged himself upon the veranda and looked in through the window at the meeting. "Umph! umph! What for?" A bystander tried to explain to him that these men were taking care of his home. Another "Umph" was uttered and a far-away look came into his eyes and a sad expression over his face. "White man! don't know—no good—no same place—white man's home, Indian no home—before Yosemite not this way," and he hobbled off the porch muttering to himself of the days long ago when the white man was unknown in the valley and the Yosemite was the place he loved best on earth—"Indian burn um brush. White man keep um brush. Big fire come, big trees go up fire, too."

Several prominent men have spoken of the degeneration of the National Park. In 1898 J. W. Zevely, acting superintendent of the park that year, was very much discouraged by its condition. A fire broke out in August near the boundary line that separates the National Park from the Yosemite. For days they were fighting fire, and Mr. Zevely employed every man that came along. Travel was checked for several days, as the fire crossed the stage line. This portion of the park is totally destroyed. Mr. Zevely was speaking of having his foresters go through the park, clean up the underwood and burn up the dead trees, but he did not receive the appointment the next year, so it was neglected and the park still continues in this inflammable condition.

"I believe if the forest is worth preserving at all it is worth being taken care of. To help pay the expenses shingles could be made of old trees that are too good to burn and posts could be made from the cedar and these could be sold. The white man cares principally for the forests for the lumber and many fine trees are destroyed by men who cut a few shakes out of magnificent trees and leave them to die.

"It is easy now to see how the forest has degenerated since the white man has acted as its protector, and to my knowledge there has not been spent a single cent toward preserving the forest. They have published numerous articles setting forth their ideas regarding forestry and some I know to be very absurd. One, for instance, they believe in allowing this accumulation of debris, claiming that it holds in moisture, but this I know to be impossible on account of the long dry spell. If the forest is taken care of in the proper manner the woods will become dense with fine trees and this will aid in holding the snow and give the desired water for irrigation.

"I speak from experience and of the results I have derived therefrom. The Mariposa big tree grove has been under my supervision and I have adopted this same method with it and derived wonderful results. There is no danger of fire originating in the grove and it presents a healthy and clean appearance."

"My idea is, instead of offering so much money as a reward for any one catching a person in the act of making a fire, is to take that money and hire men to go through the forest. The labor need not be so great to do this. Only a few men are necessary.

"I would have the forest divided into portions—about 2000 acres to the portion. Where there are dead trees fallen against live ones the men could cut down the dead tree, roll the logs away at a safe distance and set fire to them, thereby preventing the live tree from injury. Thickets could be cut down and piles be made for burning.

"The debris should be cleared away from the trees they wish to preserve. After this is all done I would have the men go around the edge of this area and remove the debris about eighteen inches all around the edge and then set fire to it and let it burn in toward the center. After this is accomplished take another portion and do the same. In this way the undergrowth can be regulated and the young

## Colonel Rucker Speaks of the Danger.

**L**IEUTENANT COLONEL L. H. RUCKER of the Sixth Cavalry, who was acting Superintendent of the Yosemite National Park last year and who had charge of the cavalry troops established as a patrol, speaks of the danger that threatens the park from the accumulation of undergrowth and dead trees. Colonel Rucker is much interested in the future of the National Park and feels that its proper preservation means much to the State of California.

"There is undoubtedly great danger from fire in the Yosemite National Park," said Colonel Rucker. "We were very lucky last year in that we discovered the only fires that broke out before they had gained any great headway. It is only a question of time before some fire will start where a military patrol does not discover it at once, and there will be great destruction of trees. This danger increases as campers penetrate deeper into the national park, as they are doing every year. There is a growing inclination upon the part of venturesome campers to get off the beaten roads, and the danger from their carelessly left campfires is a constant menace to the safety of the park under the present conditions of young undergrowth and dead timber.

"There is much that is necessary to be done in the National Park, and the clearing of the floor is one thing. And what applies to the National Park applies to the State Park in the valley proper, though the Federal authorities have no control over this section. There have been vast accumulations of fallen trees. On the Glacier Point road one great storm last year blew down fifty-two trees in one night. Those trees would furnish a great deal of fuel should a fire start and would sweep away live trees if it should get well under way."

"It would seem to me that it would be money well spent if both the Federal and State authorities should spend money enough to burn over at least the dangerous sections of the parks.

"Under the present rules fires cannot be started in the park, and underbrush cannot be cut or burned. But campers will build fires and the patrols are too scattered over the large area to prevent them. The rule against cutting underbrush has allowed a healthy growth of small trees that would act as kindling wood for the larger trees in the event of a fire. It would be manifestly improper to allow promiscuous fire building in the Park, but it would be the best thing to have some of it burned over, at least under competent supervision."

## Burn the Forest From Time to Time.

By C. H. Shinn, Inspector of Agricultural Experiment Stations of State University

**T**HE Yosemite should be surveyed from a botanical standpoint. Certain trees that are ripe should be marked for cutting. Roads should be made through the forests to protect one part from another in case of fire. Parts of the underbrush could be slashed and successfully burned without damaging the standing trees. The accumulation of dead wood in the Yosemite could be burned off if taken at the proper season and in small patches. As it is now it is ever a constant source of danger to the forests, and if the forests were destroyed half the beauty of the Yosemite would be gone.

In forests where there have been no recent fires a leaf soon several feet deep is found. This is extremely dangerous, and if fired will destroy the standing trees. Where parks are carefully watched and guarded this dead stuff should not be allowed to gather, but should be burned from time to time.