

# Yosemite

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## Draining Hetch Hetchy

A WATER AND POWER STRUGGLE

*Henry Berrey*

On August 1, 1987, daily papers, mainly those in the San Francisco Bay Area, but elsewhere as well, reported that Interior Secretary Donald Hodel had a notion to study the removal of the O'Shaughnessy Dam and the draining of Hetch Hetchy reservoir which occupies about 400

acres in the northwest part of Yosemite National Park. An Interior Department spokesman said "This is not a plan, not a proposal. This is an idea."

San Francisco's Mayor Dianne Feinstein, whose city stands to lose some \$50,000,000 in revenues from the sale of electric power generated below the dam, and, along with several neighbor-

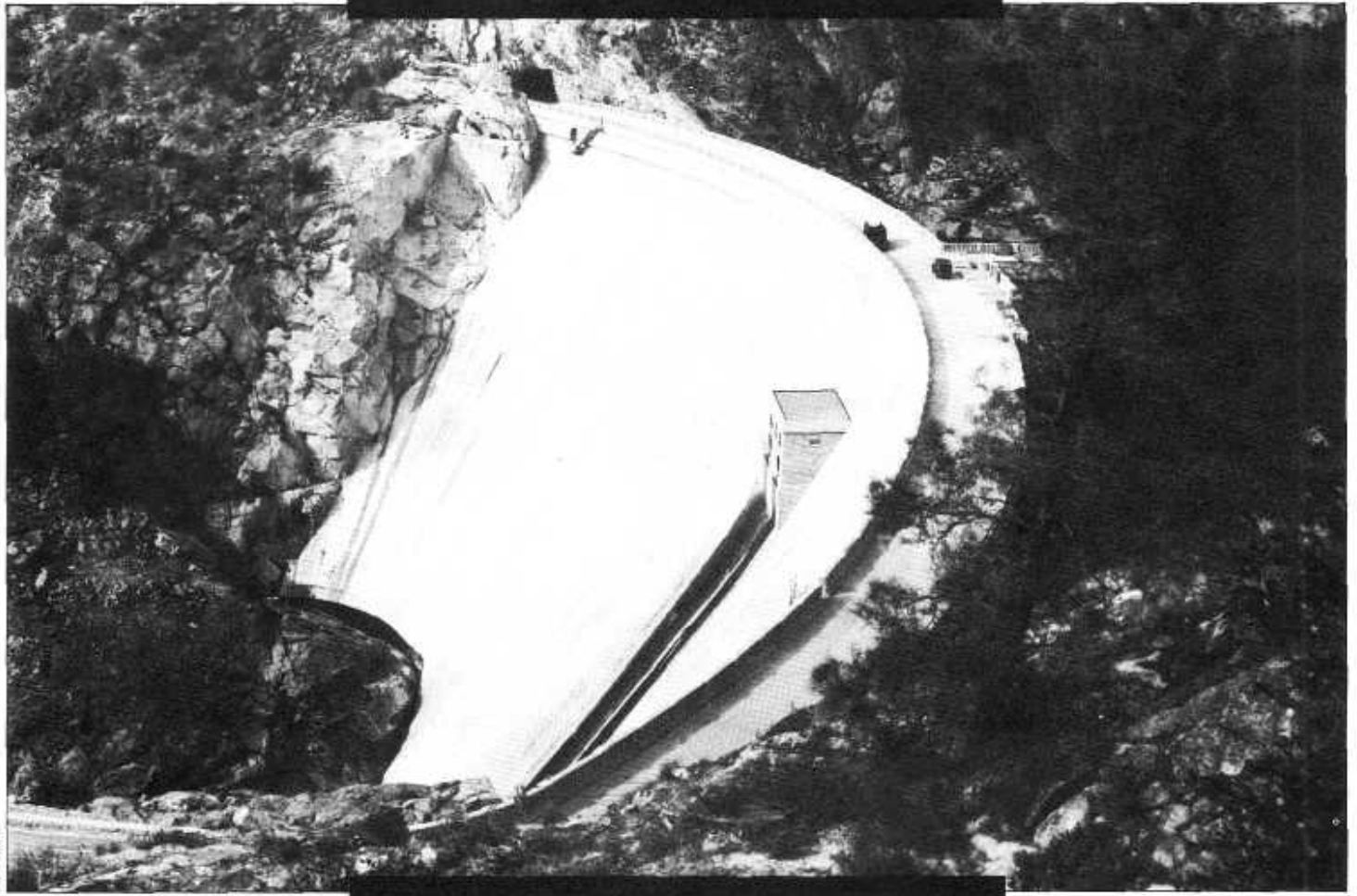
ing cities, water for 2,000,000 residents, was not thrilled with the idea.

Plan, proposal, idea or whatever, her honor responded promptly, stating "I regard this, frankly, as the worst thing since selling arms to the Ayatollah. It's one administration idea that truly belongs in Ollie North's shredder, and I'll do all in my power to fight

it." The mayor also was quoted as saying, "I think the dam is beautiful. It fits right in its setting."

So a 74-year old squabble between the conservation groups and San Francisco's water and power interests has been reignited.

The face of the O'Shaughnessy Dam.



***"I could not help wondering if there wasn't some way we might be able to start movement toward the eventual removal of the dam and reservoir. What an incredible, irreplaceable addition to the National Park System."***

—INTERIOR SECRETARY DONALD P. HODEL, IN REFERENCE TO THE REMOVAL OF THE O'SHAUGHNESSY DAM AND THE HETCH HETCHY RESERVOIR FROM YOSEMITE.

Mr. Hodel, successor to the controversial Interior Secretary James Watt, not revered for his stance on environmental matters, appears to have boggled the conservationists, one of whom J. Michael McCloskey, Sierra Club National Chairman, called the Secretary's idea a welcome "bolt out of the blue. We had no inkling he was interested in the subject." The Sierra Club has long contended that Hetch Hetchy is "a great blot on the National Park System" ever since Congress approved it in 1913. Most environmentalists have considered Mr. Hodel as more interested in developing public lands for economic growth and energy supplies than preserving areas for scenic beauty and recreation.

Since the Secretary's proposal

was announced, there have been attempts to associate the Hetch Hetchy matter with the incomplete and sidetracked Auburn Dam—that if the Secretary pursued his Hetch Hetchy ambition, the various private and public interests concerned with water and power would get together and resurrect the Auburn Dam project. This perception is said by Mr. Hodel's people to be faulty, and has no basis in fact; the two matters would be evaluated quite separately. Furthermore Mr. Hodel contends that Hetch Hetchy is not to be considered a bargaining chip for any Interior Department activity.

It is thought that the idea for the Hetch Hetchy project arose in the Secretary's mind after he attended the decommissioning

of the Longmont Dams in Rocky Mountain National Park. In that case, however, the aim was to remove unsafe dams rather than to restore a flooded valley.

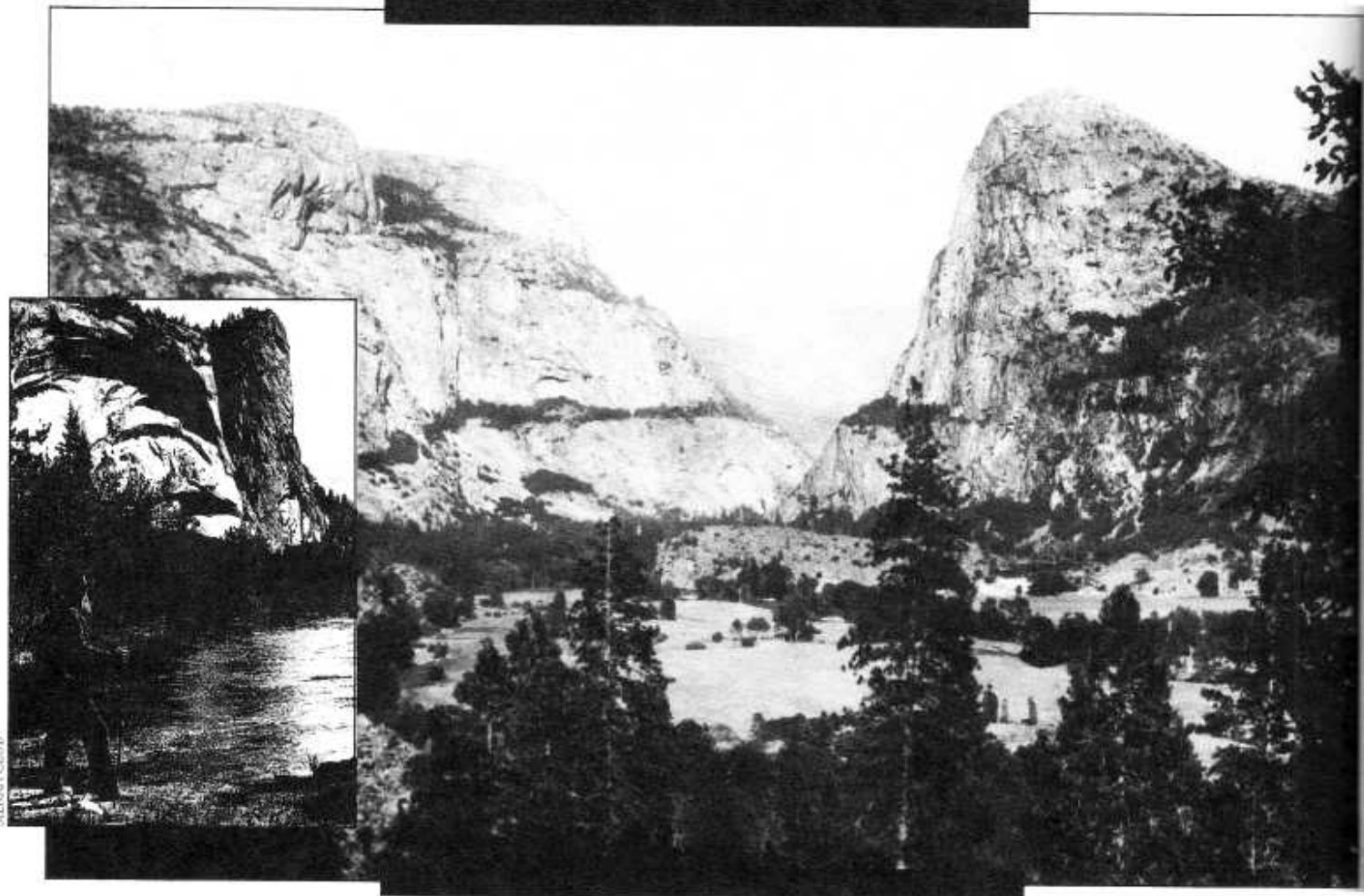
Hetch Hetchy Valley's troubled history and the later life of the much loved conservationist John Muir are inalterably linked. It is thought that Muir's vigorous but futile campaigning against the damming of the Tuolumne River and the subsequent flooding of the Valley may have contributed to his death. Muir died a year after President Wilson, in 1913, signed into law the Raker Bill, giving San Francisco the go-ahead on the dam.

Most quoted of Muir's impassioned outbursts was "Dam Hetch Hetchy! As well dam for water-tanks, the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man."

On the other was Gifford Pinchot, head of the U.S. Forest Service and allied with the San Francisco water developers. He favored a "utilitarian" conservation approach, and told Congress in 1913: "I am fully persuaded that . . . the injury . . . by substituting a lake for a swampy valley (Hetch Hetchy) is altogether unimportant compared with the benefits to be derived from its use as a reservoir."

One of the benefits of the dam was the provision of an adequate water supply for the city of San Francisco, which had become

The famous valley before it was dammed and, inset, John Muir.





## A WATER AND POWER STRUGGLE

serious in its quest for additional water sources as early as 1901 and singled out the Tuolumne River as a possibility. The disastrous 1906 earthquake and fire found the existing water supply inadequate to subdue the flames, so the city pressed Congress hard to authorize the dam, (now the only one of any significance in a National Park).

The dispute raged along, with the opponents, principally the Sierra Club, pretty well holding their own until December 1913 when Mr. W. R. Hearst's *San Francisco Examiner* produced a 16 page edition supporting the project. That seems to have done it—for on that day the Raker Bill passed the Senate and President Wilson promptly signed it.

Though not as large as Yosemite

Valley, Hetch Hetchy has many of its striking natural features, both gorges having been sculpted by the grinding of glaciers and erosion by rivers—the Tuolumne in Hetch Hetchy, the Merced in Yosemite. The walls of both are of gray granite and Hetch Hetchy's Kolana group of crags—2,300 feet in height—are a counterpart to Yosemite's Cathedral Rocks. On the opposite wall is a sheer 1,800 foot vertical wall, similar to El Capitan. Hetch Hetchy's waterfalls, Tueculala and Wapama, parallel Yosemite Falls in height and volume. Rancheria Creek spills into the Valley not unlike Tenaya Creek into Yosemite, while the Tuolumne plunges in at the east end something like Vernal Fall though not so high.

The floor of the valley before its flooding was meadowlike, covered with grasses and wildflowers, and with stands of tall pines and massive oaks.

Josiah Whitney, more than a hundred years ago, called Hetch Hetchy "almost an exact counterpart of the Yosemite. It is not quite on so grand a scale, but if there were no Yosemite, the Hetch Hetchy would be fairly entitled to world wide fame."

National Park Service Director William Penn Mott has expressed a positive but perhaps cautious opinion on his boss's proposal. "The National Park Service of course would like to have two Yosemite Valleys. Whether this is a solution that can be achieved economically and feasibly is something that will take a great

deal of study."

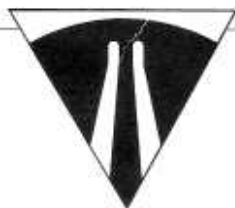
Yosemite Superintendent Jack Morehead greeted Mr. Hodel's idea with enthusiasm. "From the park's standpoint, it would be another spectacular glacial granite valley lined with waterfalls."

Both California senators were somewhat vague in discussing the proposal that could divide interest groups and constituencies in their state. Democratic Senator Cranston said reclaiming Hetch Hetchy Valley sounds like "John Muir's dream come true, however, any plan must fully compensate San Francisco and provide the city with the equivalent water and power."

The dam under construction in 1914. Elevation numbers are marked on the rockface.







Republican Senator Pete Wilson said, "I don't think Secretary Hodel's proposal can be taken seriously until . . . we find an alternative source of water for San Francisco."

But Democratic Congressman Richard Lehman, whose district includes Yosemite National Park, called it a "visionary idea" and said he believed the Secretary was sincere in proposing it. "This is something environmentalists have wanted since the dam went up: tear it down. How do you oppose him [Mr. Hodel] just exploring it if there's a chance you could mitigate the awful damage at Hetch Hetchy?"

Congressman Tony Coelho, Democrat-Merced: "It's something that is rather intriguing but unrealistic." As majority whip, Mr. Coelho's support would be important in moving such a plan along.

If Mr. Hodel is sincere about his intentions and the whole affair isn't a political red-herring as some have suggested, designed to make the administration look better in the eyes of conservationists, there are scores of questions to be answered and considerations to be reckoned with in the assessment of whether or not to raze O'Shaughnessy Dam. Politicians may do a little backing and filling and jockeying for attention, but there's no room for compromise. The dam stays or goes.

Not surprisingly, the Sierra Club immediately expressed elation over Mr. Hodel's unexpected statement. It has long fretted over the presence of Hetch Hetchy and nearly 80 years ago the Club's President William Colby said that it was a fight that the organization would pursue "if it shall take until doomsday."

Michael McCloskey somewhat cautiously allowed that Mr. Hodel's current proposal to restore the Hetch Hetchy Valley was a welcome one. Mr. McCloskey claims that San Francisco won't go thirsty or without power, having storage rights in Don Pedro Dam downstream on the Tuolumne and the ability to take its drinking water from the reservoir which is close to the city's aqueduct. He states that power is no problem, since northern California utilities are awash in co-generated electricity from factories. It should not be forgotten, Mr. McCloskey said, that the O'Shaughnessy and Lake Eleanor Dams represent a monumental embarrassment for the nation that originated both the idea of

national parks and the standards for their protection.

Among other conservation-oriented groups there was not complete agreement with Secretary Hodel's idea. National Parks and Conservation head Paul Pritchard stated that his group initially had opposed the idea, but after meeting with Mr. Hodel decided that the Secretary was sincere. Mr. Pritchard plans to start building a constituency among the members.

George Frampton, Jr. of the Wilderness Society claims that his organization's reactions were negative. "The idea is interesting," he said, "but given Secretary Hodel's miserable record to date, there is no real evidence that he's sincere."

Peter Coppelman of the Wilderness Society states that the Hetch Hetchy proposal is so inconsistent with the secretary's other anti-environmental policies, there's doubt that he's serious.

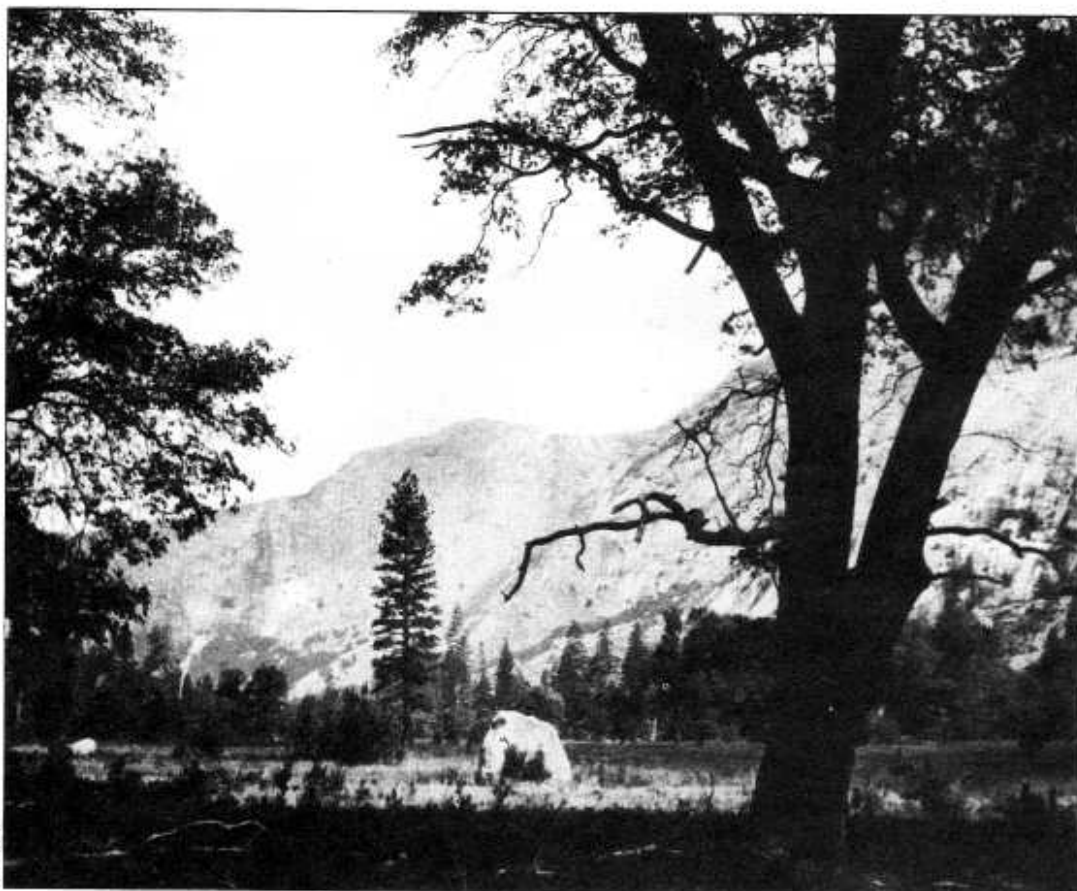
A group of 100 outdoor-oriented organizations, the American Recreation Coalition, of which Derrick Crandall is head, feels Secretary Hodel has thrown out an idea that attracts many of his members because it breaks down preconceived notions and has created a positive target for those who care about natural resources.

David Brower, highly regarded conservationist, called upon "San Francisco Mayor Feinstein, The Board of Supervisors and all San Franciscans to correct the biggest environmental mistake ever committed against the National Park Service."

Certainly the image of a second magnificent Valley in Yosemite National Park is an appealing one. With public access and appropriate low-key visitor facilities, there can be no doubt that tourist pressures on Yosemite Valley would be relieved.

And with seventy years of Yosemite experience on the books, the National Park Service could do an even more noteworthy job in managing Hetch Hetchy.

The north wall of Hetch Hetchy at the turn of the century.



# A Rare Basket Collection Returns

A  
Little  
History

Martha J. Lee

**The Indian Cultural Museum** has recently been rearranged to accommodate the Atkinson family collection of Yosemite baskets. This early collection of Indian baskets, collected in Yosemite Valley over 80 years ago, has been loaned to the Yosemite Museum by Marion Steinbach.

These baskets are particularly significant to Yosemite because the original collectors, Charles and Nellie Atkinson, are noted figures in Yosemite's



Charles and Nellie Atkinson, circa 1893. George Fiske/YM

history. Nellie Crockett Rivers came to Yosemite from Petaluma in 1889 at the age of 25, following the death of her first husband in 1887. She worked as a waitress at the Stoneman House in the summer of 1889, sold photos at the Stoneman House, and worked for photographer George Fiske developing, printing and retouching photographs. Charles Atkinson, 15 years Nellie's senior, had come to Yosemite in 1878 in the employ of J. M. Hutchings. He subsequently worked for the state-administered Yosemite Valley Commission and performed various services for local residents. Charles and Nellie were married on October 18, 1892. The Atkinsons had three children: Dorothy (1893-1963), Charles Edward "Ned" (1894-1964) and William Bonney (1898-1902).



George Fiske/YM

Nellie befriended local Indian women and traded baked goods to them for their beadwork. She became an enthusiastic collector of Indian baskets, reflecting the growing public interest in Indian arts that took place at the end of the last century. Her baskets, which almost filled one room of the

The Atkinson basket collection. Captain Dick's basket is the globular-shaped basket with a stepped-diagonal design in the center, and the basket with English words and pictures is directly in front of it.

Atkinson home, were acquired primarily as gifts from her Indian friends or in exchange for kindnesses. Nellie was also interested in art, and she collected paintings, statuary and photography. When Yosemite

When Yosemite Valley's administration was ceded from the State of California to the federal government in 1905, Charles Atkinson was without a job. He moved with his family to Soquel, near Santa Cruz, in 1906 where he became a rancher. When Charles died in 1912, Nellie moved in with her daughter Dorothy. Nellie died in Santa Cruz in 1917.

The Atkinson basket collection, intact as it was photographed by George Fiske for Galen Clark's 1904 edition of *Indians of the Yosemite*, was inherited by Nellie's daughter, Dorothy Atkinson Bardsley. After her death in 1963, the baskets were stored in an attic by her husband, Leonard, from whom they were purchased



Yosemite Research Library

Dorothy and Ned Atkinson on "Plum Duff," 1897. Copied from Dorothy Atkinson's autograph book, courtesy of Bonnie Douthitt.

by Marion Steinbach several years later.

The Atkinson collection has been installed in its own case in the Indian Cultural Museum to replicate George Fiske's photograph. This intact collection is invaluable as it typifies basket collections made in the region at the turn of the century. It includes a good selection of utilitarian baskets as well as others that provide important insights into the development of Yosemite basketry and how it changed in response to Anglo collecting activities. One basket displays a new design style, manifesting English words such as "girl" and "cow" and pictorial representations, but also shows a blending of Owens Valley and Mono Lake Paiute technology and materials. Other baskets are among the earliest from Yosemite with black and red weaving materials appearing in the same pattern—a departure from earlier one-color designs.

Unfortunately, not much specific information about individual baskets has survived with the collection. Marion Steinbach relates one interesting story that has been passed down in the Atkinson/Bardsley family. Captain Dick, a Miwok leader living in Yosemite Valley, became ill and was expected to die. His prized basket was to be buried with him, as was customarily done with valued possessions. Although Captain Dick's case seemed hopeless to Miwok shamans who had attempted to cure him, Nellie Atkinson reportedly nursed him back to health. In accordance with Miwok custom, Captain Dick gave her his treasured basket just as he would have paid a Miwok shaman for his cure. Captain Dick lived until 1911, when he died at an estimated age of 100 years.

Marion Steinbach and her husband Hank have been longtime advocates of Yosemite. They have donated numerous items to the Yosemite Museum and they

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# Members' Meeting Shortened but Sweet

The skies wept, but all else was convivial for the Yosemite Association's 12th Annual Members' Meeting at Tuolumne Meadows on September 12. Because of the weather, the business portion of the meeting was cut short, but not before poet Gary Snyder had delivered a thoughtful and inspiring address.

Given the various factors at work in early September, it's somewhat remarkable that the meeting was even held. Large forest fires raged throughout California, and for a time, both Highways 120 and 140 into Yosemite were closed. With cold and wet weather at Tuolumne, conditions looked bleak.

Nevertheless, the approximately 300 members in attendance seemed undaunted. Sun shone on the luncheon, but was gone from sight by the time everyone assembled for the formal meeting. When it began to rain in earnest, an exodus for shelter took place.

To the pleasure of the group, Gary Snyder spoke about his personal experiences in Yosemite, read several of his "Yosemite" poems, giving fascinating background information for each, and discoursed on the importance of wilderness in Yosemite and elsewhere. Throughout the weekend, Snyder mingled with Y.A. members, signed his books of poetry and answered questions. His re-



Gary Snyder spent the weekend in relaxed and outgoing style.

laxed and outgoing style was perfect for the event.

Because several items of business were not discussed as planned, a summary of the report that would have been delivered follows:

**Membership:** Current membership of the Association stands at 3,800 and growing. During summer, 1987, N.P.S. naturalists were asked to write interpretive articles for publication in *Yosemite*, and the resulting stories should bring a stronger "Nature Notes" flavor to the publication.

**Seminars:** The seminar program continues as a healthy activity of Y.A. Expanded course offerings were available the past year, and new study topics are being considered.

**Sales/Publications:** The new El Portal warehouse has been completed and occupied, and Y.A. received two publishing awards at the biennial meeting of the

*Yosemite*, and spent many years researching the history of the Yosemite area. The Schlichtmanns were active in the formation of the Pioneer Yosemite History Center in Wawona, and donated most of the furnishings to the Park, a total of over 1000 items.

The Yosemite Museum owes a great debt of gratitude to donors and active supporters such as these. The installation of the Atkinson baskets in the Indian Cultural Museum brings a large turn-of-the-century collection back to Yosemite once more for everyone to enjoy and learn from.

Conference of National Park Cooperating Associations. The "Yosemite Fun Book" has been published, and the limited edition book entitled "Such A Landscape" will be available in November. The Carl Sharsmith biography is expected by next spring.

**Other Programs:** Y.A. operated the Ostrander Lake Ski Hut with success for another year, had a good year with its Yosemite Theater program, and co-sponsored the Art Activity Center with the Yosemite Park & Curry Co. From revenues generated throughout the year, Y.A. was able to donate almost \$110,000 to the National Park Service.

**Yosemite Fund:** The fundraising program has been well-received and is thriving. Through the end of July, about \$500,000 had been raised for the year. Exemplary corporate support has been received from Chevron and Polaroid, and two major projects, the demolition and removal of the Bridalveil sewage treatment facility and the restoration of Stoneman Meadow, will be undertaken this fall. Seventeen volunteers staffed two fundraising kiosks in the park this summer

and effectively educated visitors about the program and solicited donations.

**Board Nominations:** The nominating committee of the Board of Trustees recommended that the two incumbents whose terms are expiring, Dr. Harvey Rhodes and Ms. Anne Schneider, be re-elected.

Next year's Members' Meeting will be at Wawona on September 9 and 10, 1988.

The Yosemite Association would like to express its appreciation to the following individuals and companies who generously donated prizes for the Members' Meeting raffle this year.

American River Touring Association; ANCAL; Bank of America, Yosemite Valley; California Data Marketing; Copy Center; Crown Printing; Dumont Printing; El Portal Market; Erna's Elderberry House; Fresno Office Supply; David Gaines; Heubner Sports; Merced Canyon Committee; Mono Lake Committee; Narrow Gauge Inn; William Neill; OARS, Inc; Scope Enterprises; Unisource; Wagon Wheel Restaurant; Whitewater Voyages; Yosemite Institute; Yosemite Mountain/Sugar Pine Railroad; Yosemite Park & Curry Co.; Yosemite Postmaster; Zephyr River Expeditions, Inc.

## Road Blocked by Rock Slide Reopens

**Northside Drive**, the main exit road from Yosemite Valley, has reopened to traffic. The road had been closed by a rock slide in March, and park officials had feared additional rock fall.

Once it was determined that all was stable on the east face of the Middle Brother (one of the granite outcroppings of the Three Brothers formation), NPS crews cleared tons of debris and rock which had been strewn throughout the area.

After the original slide, Yosemite Valley traffic had been routed for two miles around the closed roadway to Southside Drive, which was temporarily changed to two-way traffic.

which was temporarily changed to two-way traffic.

Although Northside is the main artery for leaving the Valley via Highways 41, 140 and 120, there were no major traffic problems that resulted beside a moderate increase in congestion. While the road was closed, continuing smaller slides delayed clearing of the debris. NPS officials and representatives of the US Geological Survey monitored the slide area and conducted aerial surveys before the decision was made that it was safe to clear the roadway.

To insure the safety of the public, monitoring of the rock face will continue, particularly at times of heavy storms, freeze and thaw cycles and earthquakes. Each of these situations could result in new rock fall activity.

## Baskets

*Continued from page 5*

have placed many other objects on loan to Yosemite. Marion has made her extensive research notes on Yosemite Indians, based on interviews conducted over the past 30 years, available to Museum staff. The Steinbachs follow in the footsteps of Marion's parents, Emil and Margaret Schlichtmann, the largest single donors to the Yosemite collections. Mrs. Schlichtmann co-authored *The Big Oak Flat Road to*



# The Mystery of the High Sierra Sunset

David Balogh

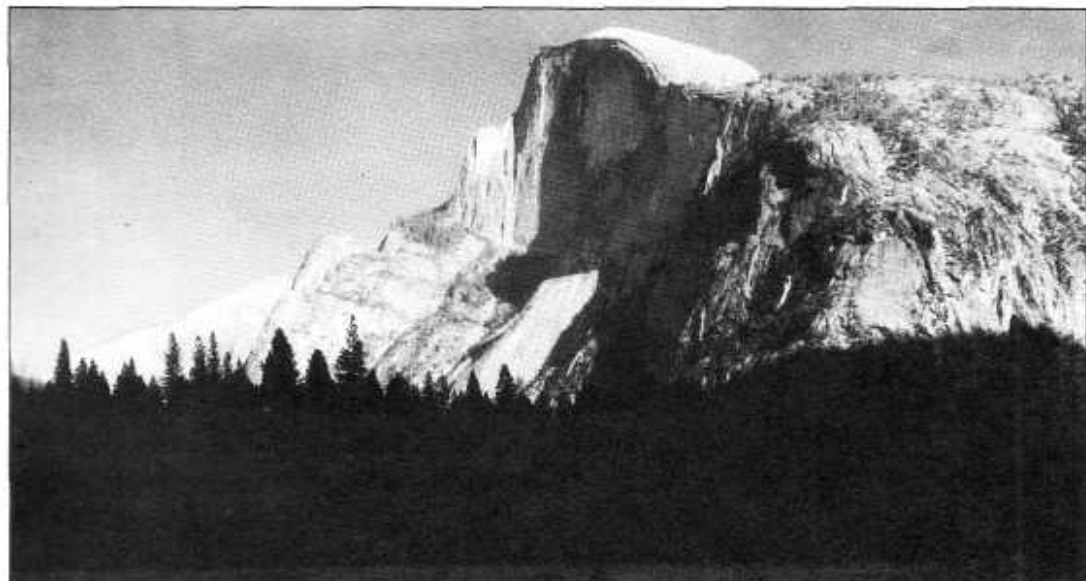
It was supper time on an August evening in 1957 in the dining tent at Vogelsang High Sierra Camp. My introduction to Yosemite was a trip around the High Sierra Loop, and to a 14 year old everything was new and exciting. As I finished dessert, I noticed that the canvas covered ceiling was turning orange. Was it a fire? No odor of smoke was detectable. I excused myself and stepped outside. Thirty years later, the sight that met my eyes is as memorable and awe inspiring as it was then. The dining tent, Fletcher Lake, Mt. Vogelsang, the rocks at my feet, even my hands were glowing the most vivid orange I had ever seen. I was astonished, mesmerized, I even forgot to take a picture. Orange became red and then the mountains began to glow a deep salmon color as if they were attempting to relive their molten heritage from 100 million years before.

I had no idea what had caused the color, nor was I really to understand it for years to come. Fishermen returning to camp, and the Vogelsang staff were no doubt amused at my astonishment. They had all seen it before, but none could explain to me *why* the color came and changed and ended so quickly.

Fifteen years and a college education later, I knew why. What's more it became my duty to explain it to a current generation of park visitors, as a park naturalist at Glacier Point. In later years I explained it in depth to new naturalists as they prepared, in turn, to present a sunset talk. What follows is my explanation of the phenomenon.

Our star, the sun, is essentially white hot, with a surface temperature of about 10,000° C. If this white light were broken up into its parts, as it is in a rainbow, the following colors are seen: red, orange, yellow, green, blue, indigo, and violet, *in order* from the longest wavelengths .72 microns

(red) to .4 micron (violet). (A micron is one-millionth of a meter). Colors on either end seem to "balance" each other and if one could selectively remove the shorter wavelengths (blue, indigo and violet) from the sun's direct beam, the color of the sun would apparently change from white to a shade of yellow since the longer "warmer" colors would be left, i.e. red, orange, yellow and some green.



If you were an astronaut in space, the sun would look essentially white. On the earth's surface the sun looks yellow (unless you live in a large city, then it may appear orange). Why?

Our atmosphere contains many particles of dirt, some of which are very small. The smallest are higher in the atmosphere, the larger and heavier are nearer the earth's surface. Those smaller particles whose diameter is around 1/10 of a wavelength of light, about .06 micron, will scatter (like a ricocheting bullet) the shorter wavelengths of light about 4 times more effectively than they will the larger wavelengths. The scattering of blue, indigo, and violet makes the sky blue and the remaining longer wavelengths make the sun appear yellow. This phenomena is called

Rayleigh scatter. (At night the sky is black because there is no sunlight to scatter). If the dirt in the air is larger in size, i.e. 30 times a wavelength in diameter, the scatter is non-selective — and the scatter is white. That's the reason why the sky may appear "powdery" or light blue. This non-selective scatter is called Mie scatter.

The "blue" (Rayleigh) scatter is not "lost" to space. It arrives at the earth's surface as indirect or

Canyon's red rocks absorb all wavelengths of sunlight *except* for the ones which they reflect i.e. rusty-red. Granite reflects almost all colors equally but not 100% efficiently, thus the rock looks grey instead of white. The important thing is that the rock has *no* intrinsic color of its own; thus, when the sun sets, the rocks of Yosemite will show any subtle changes in the colors remaining in the solar beam which is re-

lected from them. As the sun drops toward the western horizon, the direct beam radiation from the sun must pass through more atmosphere than at mid-day. There are therefore, increasing amounts of Rayleigh scatter *subtracting* wavelengths (color) from the solar beam. The remaining light reflects from landmarks like Half-Dome, back to the eyes of the observer and is seen as a color equal to all of the remaining colors in the solar beam. Simply stated, when the green light is scattered, Half Dome looks yellow; when the yellow is scattered, Half Dome looks more orange; when the orange is scattered, all that is left is the longest and least easily scattered red, and Half Dome then looks red; when

## Sunset Colors

In midday, the granite rocks of Yosemite look grey because they have no dominating pigment in them. The Grand

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# Past and Future Changes in Yosemite's Vegetation

Jeffrey Schaffer

*In 1986, the author derived a plate-tectonic model for Sierra Nevada uplift. In the Spring 1987 issue of this periodical, he briefly described his working model and applied it to past and future elevations in the Park. In the Spring 1987 issue he presented his stream-pinacy theory on the origin of Yosemite Valley. This theory and the plate-tectonic model were developed independently, yet they seem to complement each other. In Schaffer's final article, he discusses the past and future distribution of some of the Park's plants as implied by the model.*

**If one's information** on Sierra Nevada uplift is inaccurate, then one's conclusions on the origin and development of Sierran plant (and animal) populations will also be inaccurate. I believe botanists (and zoologists) have been making erroneous conclusions in the biogeography of Sierran species because they've been using the wrong models of Sierran uplift. There are two models in particular, one largely accepted by geologists, the other, discredited by geologists but accepted by botanists.

## Two Other Views of Uplift

The latter, proposed by a paleontologist in the 1960s, states that the Sierra was uplifted along its east side and tilted west as a rigid block all in the last million years (the duration he thought represented the "Ice Age," which we know today was more like 2½ million years). Because of his ties to botanists, his model quickly became popular with them, and is still cited today. Most of the fossil pollen collected east of the Sierra crest indicated that before the "Ice Age" the crest was low. The fossil pollen gave no indication of high-desert species like today's, which are

due to a high Sierra crest creating a rain shadow that prevents most precipitation from reaching the eastern lands.

This lack of a pre-Ice Age rain shadow perplexed me for years, and it wasn't until I reviewed my 1986 vegetation transects in the Carson-Iceberg Wilderness, just north of Yosemite, that I discovered a possible solution. I realized that in Carson-Iceberg today, which has a two-mile-high Sierra crest, and a high-desert environment east of the crest, a pollen analysis fails to truly represent the respective species of each environment. Why? Because some species are wind-pollinated while others are insect-pollinated, and it's the wind-pollinated, usually streamside species that are most likely to have their pollen blown into streams and then transported to a sedimentary basin. And these wind-blown species are quite similar on both sides of the crest: white firs and Jeffrey pines on slopes just above



Jeffrey Schaffer

Golden draba (*Draba aureola*). This alpine plant grows on the summit of 11,000-year-old Lassen Peak (10,475'). The nearest population of golden drabas is on Diamond Peak, 210 air miles to the north, in central Oregon. Quite likely, Lassen Peak got draba seeds transported in the digestive systems of southward-migrating birds.

creeks, and alders, willows and cottonwoods on creek banks. Thus, although the east-side vegetation differs greatly from the west-side vegetation, this difference is not reflected in the pollen record.

The model preferred by many Sierran geologists is similar. It states that the Sierra was uplifted along its east side and tilted west as a rigid block. However, in this model the period of uplift was much longer. Minor uplift may have begun before 25 million years ago, but with time, uplift continued at an increasing rate. This theory, if extrapolated into the future, projects a Sierra Nevada of possibly Himalayan height in the Southern Sierra and of unknown height in the northern Sierra.

This model, which hasn't changed much in over a century, is, in my opinion, inappropriate for biogeographic studies because it has what I perceive to be a fatal flaw: it fails to take into account



Jeffrey Schaffer

Diamond Peak (8,744') in the central part of Oregon's Cascade Range. It is one of the few summits supporting golden drabas. The next southern summit with these alpine plants is Lassen Peak, 210 miles to the south.





that during the entire period of supposed uplift, the Juan de Fuca plate was opposite the range, off the California coast, and migrating northward.

Imagine a lake with some rowboats that are arranged in a south-north line (representing the north-south Sierra crest). Now imagine a speedboat (representing the north-migrating Juan de Fuca plate and its impact on the Sierra), just west of this line, racing north past boats and rocking each one. Obviously, the southernmost boat is rocked first and the northernmost boat is rocked last, as the plate-tectonic model implies. By analogy, the traditional geologic model implies all boats would be rocked simultaneously, although those at the north end of the lake would be rocked less violently than those at the south end.

### Alpine Plants

My model suggests that uplift began in the southern Sierra and that that area — basically Sequoia National Park — has risen about as high as it will go. The model also states that in the northern Sierra, uplift has just begun, and in about 8 million years that area — the Feather River country — will reach heights similar to those in the southern Sierra. Yosemite National Park lies between the two extremes, and the model predicts it has had about 5 million years of uplift and has about 3 million years left. The model appears to suggest that in our area, the Sierra crest has been high enough to support alpine plants for about the last 1½ million years, because before then, most of the crest may have been below 10,000 feet in elevation.

However, alpine plants may have been evolving along the Sierra crest for tens of millions of years. There are two reasons to believe this. First, major volcanism has occurred in the area from at least 25 million years ago until just a few million years ago. Quite likely during this time,



Jeffrey Schaffner

there were sizable volcanoes, just as there are in the Cascade Range today (its existence is due to the diving Juan de Fuca plate, which a few million years ago was diving beneath the Sierra and producing similar volcanoes). The southernmost major volcano in that range today is Lassen Peak, which provides a haven for some alpine plants. It is only about 11,000 years old, so its population of alpine plants can't be any older. However, the peak is only the most recent in a series of major volcanoes, each one capable of supporting a population of alpine plants. I suggest that during the Sierra's volcanic phase, there were always at least several major volcanoes, either active or eroding, which provided alpine habitats. Thus, alpine plants could have existed continuously in the Sierra

After the end of major volcanism in the Yosemite area and before any significant uplift, alpine plants may have existed in shady recesses on eroding volcanoes, such as on today's Three Fingered Jack (7,841'), in the central part of Oregon's Cascade Range.

Nevada during the entire volcanic period. The implication is that alpine plants didn't have to evolve in the last million years, but rather had *at least* 25 million years (and possibly much more time) to do so.

After the major volcanism stopped in the Sierra Nevada, the situation for alpine plants looked bleak, due to the eroding, inactive volcanoes. However, a fortunate event happened: the earth's climate began to cool. This began about 5 million years ago, but really took off in earnest about

2½ million years ago. Back then, alpine plants didn't have to exist above 9,000 or 10,000 feet, as they do today; 7,000 feet would have easily sufficed. My model suggests that the average height of the Sierra crest at the onset of uplift was about 6,500 feet, or marginally alpine. However, the crest back then had considerable variation, as it does today, and much of it would have exceeded 7,000 feet, while certain peaks, such as the precursors of Mts. Dana and Lyell, would have exceeded 8,000 feet. Thus, if my model is correct, an alpine environment should have existed uninterrupted in the Sierra in the Sierra for at least 25 million years.

### Future Alpine Vegetation

Near that south part of the Park my model suggests that the Sierra crest will rise about 1,250 feet before leveling off in about 3 million years, while near the north part of the Park, the crest will rise about 2,600 feet before leveling off in about 4 million years. Obviously, the Park will become more alpine in character. Half Dome will nudge into the alpine realm, while nearby Clouds Rest will advance farther into it, though there is the possibility that extensive glacial erosion could remove either summit in the next few million years. The Buena Vista crest should fare better. It will evolve into a "Clark Range," with similar alpine vegetation.

But over the last 2½ million years, the Park has been, more often than not, in a glacial period, not in a "warm" interglacial period, such as today's. This pattern is likely to last millions of years into the future. So we can ask, what will be the extent of alpine vegetation in the Park 4 million years from now, when the topography has reached its zenith? The model suggests that the 7,000' contour — the presumed lower level of alpine vegetation during glacial times — will run from the Cherry Lake vicinity south-southeast to Chowchilla



Jeffrey Schaffer



Jeffrey Schaffer

Mountain, both features just beyond the Park's western boundary. Thus, virtually the entire Park will be covered either in glacial ice or alpine vegetation. Such a prognostication does not bode well for giant-sequoia groves, which could be forced down into the hostile habitats of the major, low-elevation, steep-walled canyons. In previous glacial times, the Park's groves probably suffered attrition from such migrations, but future migrations will be even more detrimental.

#### Giant sequoias

It's widely believed that

Over the last 2½ million years, glaciers and snowfields may have existed on many moderate-height peaks in the eastern Sierra, these looking like today's Old Snowy Mountain (7,930') in southern Washington's Goat Rocks Wilderness.

sequoias migrated to their present locations from Great Basin lands. About 3–4 million years ago, as the Sierra Nevada was rising, these lands to the east began to sink, and today's Sierra crest developed. The eastern lands became increasingly arid, and sequoias became established in

the Sierra before the developing crest blocked further migration. These lucky sequoias then migrated southwest across the range and ultimately gave rise to today's 75 or so groves.

There are two sets of groves in the Yosemite area: the Tuolumne and Merced groves west of Yosemite Valley, and the Mariposa and Nelder groves south of it. I believe each set is the result of a distinct migratory path, the first through a canyon in the Virginia Pass-Tioga Pass area, and the second through a canyon in the Minaret Summit area. I'll deal only with the latter area, which is

From about 25 to 5 million years ago, the eastern Sierra could have had a few major volcanoes, each supporting alpine flora. They may have looked like today's Glacier Peak (10,541'), in Washington's North Cascades.

significant because of a unique event. For likely millions of years the Middle Fork San Joaquin River flowed down a major canyon, but came to a halt about 3.2 million years ago, when it was dammed by massive outpourings of lava. (The eruptions probably occurred at the same time as the initial development of the local Sierra crest.) The migrating sequoia population would have had to pass through the area before this time, because later, migration would have been very improbable. Does my model bear this out?

Today's Mariposa and Nelder groves, despite being only a few miles apart, are at significantly different elevations. Trees of the Mariposa grove, which is on southwest-draining slopes, lie at about 6,000 to 7,000 feet elevation; trees of the Nelder grove, which is on warmer, south-draining slopes, lie *anomalously* lower at about 5,000 to 6,000 feet elevation. Hence, today's elevations range in this part of the Sierra Nevada from at least 5,000 to 7,000 feet. When was Minaret Summit area at those two elevations? Today, it is over 9,000 feet, but if one removes the volcanic rocks deposited in the last 3.2 million years, then the elevation is more like 8,400 feet. With the model we can determine that the crest was 5,000 feet elevation about 2.2 million years ago, when the migrating populations should have been entering the area, and it had risen to 7,000 feet elevation about 1.3 million years ago, when the population should have been leaving it.

But this time slot contradicts the constraint that the grove had to be west of Minaret Summit by 3.2 million years ago. Is the model wrong? There are at least several alternative explanations, and each

# Yosemite Viewpoints

## Valley Pollution

Yosemite is just about our favorite spot on earth; however I am no longer able to stay in the Valley for any length of time because of the smoke pollution from the numerous campfires.

In 1982 I visited Yosemite Valley with my family. After three days I was forced to leave; the smoke made it virtually impossible for me to breathe. Since then I have tried again with the same results and now my family visits Yosemite without me.

I cannot be the only one with this problem. I am highly allergic to smoke but I am not a handicapped person. I have run seven marathons, one just two weeks prior to my aforementioned 1982 visit.

It is unfortunate that such a beautiful spot is so polluted. The cars have been banned from parts of the Valley; cannot the smoke be controlled too? I would love to be able to spend some time in Yosemite Valley again.

Marilyn Trankle

Honolulu

## A New Objective for the Fund?

I was extremely pleased to learn of The Yosemite Fund. For many years I've felt that just such an organization was needed in the Park.

I'm enclosing this letter with my contribution because I wanted to add one more thought to the list of important objectives the Fund has lined out thus far. It's an old idea, enormous in scope, but

a problem nevertheless that will have to be dealt with some day. Problem or solution, the restoration of the Hetch Hetchy Valley to its natural state should be the priority for Yosemite's future. Having been a visitor to Yosemite for thirty years, and a seasonal resident for several more, I can see that such a project will only be accomplished through the combined efforts of the National Park Service, The San Francisco Water Department, and most importantly, through a strong private organization such as the Yosemite Fund.

As a supporter of The Yosemite Fund, I hope to see added alternatives which could lead to a Hetch Hetchy Valley, not a Hetch Hetchy reservoir, for future generations.

Please keep me informed of all The Fund's progress, and any progress regarding Hetch Hetchy especially. I would be extremely interested in volunteering my services for a Hetch Hetchy project.

Thank you so much for your hard work!

Jennifer Harris Fosgate  
Davenport

## Opposing Sequoia Fires

I would just like to express my opinion on the issue of the burning Sequoias taking place in the Mariposa Grove. I was just visiting Yosemite when I first saw the fires, and I thought it was terrible.

I'm sure that Mr. Steve Botti can find other means of ridding the litter in the park. According to the Summer 1987 edition of *Yosemite* there are negative after-effects that become the consequence of a poorly set-up system on the part of the Resources Management.

As a member, I would like to know if there is a way to change this arrangement. Any further information would be greatly appreciated.

Lorrie A. Spurgat  
N. Hollywood

## Excellent Field Classes

Thanks for offering the Grass and Sedge field class this summer with Carl Sharsmith. I speak for the others in the class as well as myself when I say that we appreciated the opportunity to take a field class in such an important aspect of botany that is only rarely offered by an organization.

I also took the Alpine Botany class the following week with Steve Botti. In spite of this being an exceptionally dry year this class was (as it was last year) excellent. If circumstances permit I hope to make more field botany classes that the Association offers in the future.

Harry Spilman  
South Pasadena



predicts a different course of events for the fate of sequoias.

First, the population could have migrated past the location of today's crest during a period of intense cold that occurred about 5 million years ago. After the climate warmed, the population could have survived on suitable slopes of the Ritter Range, just west of the crest, which back then may have stood over 9,000 feet elevation.

Second, we have to remember that sequoias prefer slopes to canyon bottoms or ridgecrests. So, 3 to 4 million years ago, when the San Joaquin canyon's bottom was too warm for the trees, the higher slopes — particularly the north-facing ones — may have been just right.

Third, over the last 2½ million years, these trees have been, more

The Ritter Range, viewed from the volcanic Sierra crest. Giant sequoias may have gotten established on the slopes of this range before major volcanism and down-faulting along the crest prevented further westward migration of the trees about 3.2 million years ago.

often that not, subjected to the influences of Ice Age climates. What we discern about the sequoia's responses to today's climate may be dangerously inaccurate. As I mentioned above, the location of the Nelder grove is anomalous: located on a south-facing slope, it should be higher than the Mariposa grove, not lower. Perhaps the trees are operating under rules more appropriate for Ice Age climates than today's climate.

Fourth, the sequoias didn't migrate alone, but were accom-

panied by a vast array of plants, animals and microorganisms. The composition of this assemblage undoubtedly changed as the sequoias migrated from western Nevada to their present locations, and with the change came changes in environmental and biological constraints. We can determine what these are today, but are very much in the dark about what they were several million years ago. We need to know much more about these species before we can accurately reconstruct the sequoia's migratory history.

As you can see, we know very little about the tree's migration, although naturalists from John Muir onward have confidently given their accounts. One thing is almost certain: *the tree is headed for extinction.* However, with man's help, the tree can be planted in the proper environments to ensure an added few tens of millions of years to its existence. But to optimize the success of transplanting, we need to understand, among other things, the past and future topography of the Sierra-Cascades. Perhaps a new plate-tectonic model such as I have proposed will serve to promote that understanding.



# Books of Interest

The following selection of books are works which chronicle the wide and varied scope of Yosemite and the High Sierra region, or the national parks generally. All can be purchased from the Association at the Yosemite Valley Visitor Bookstore, or by mail order, using the order form on page 14 of this issue. Members of the Association are entitled to a 15% discount off retail prices.

## The Penguin Dictionary of Botany

Blackmore/Tootill  
Penguin Books, 1984  
#9365, paper, \$7.95

This is a new dictionary of botany which covers both the pure and applied aspects of the subject, and such related fields as agriculture and horticulture. Encyclopaedic in form, it contains substantial articles (200-250 words) on major terms and concepts as well as shorter articles and cross-reference type definitions, ranging from physiology to cell biology, microbiology to horticulture and genetics to plant pathology.

The Penguin Dictionary of Botany will be a useful reference source for students whose subjects have a bearing on botany; it will also be useful to the informed layman with an interest in this topic, and an important aid to study for A-level students and first year students studying botany or biology.

## Peterson First Guides: A Simplified Field Guide to the Common Species of North America: Birds; Insects; Mammals

Sponsored by the Roger Tory Peterson Institute  
Houghton Mifflin, 1986.

#10028 (*Birds*), paper, \$3.95  
#10030 (*Insects*), paper, \$3.95  
#10035 (*Mammals*) paper, \$3.95

These guides are the first books the beginning naturalist needs. Abridged versions of the famous Peterson Field Guides, the *First Guides* focus on the species you are most likely to see. They make

it easy to get started in the field, and easy to graduate to the full-fledged Peterson Guides. Each book features the most common and conspicuous species, each illustrated in full-color, along with concise descriptions. The Peterson Identification System, which uses arrows on the illustrations and italics in the descriptions to show you exactly what to look for, is featured throughout the books.

## Westering Man: The Life of Joseph Walker

Bil Gilbert  
University of Oklahoma Press, 1985,  
#17845, paper, \$9.95

Joseph Walker (1798-1876) had probably the longest and most distinguished career of any frontiersman in American history. This first biography of this great frontier hero is based on years of research and many previously unpublished and neglected sources. It gives a rousing and authoritative picture of Walker—his pioneering heritage, his many accomplishments, and his exceptional personality. The book chronicles Walker's many explorations including his sighting of Yosemite Valley in 1833.

Bil Gilbert is an award-winning journalist whose articles have appeared in Smithsonian, Audubon, Sports Illustrated, and many other important publications. A graduate of Georgetown University's School of Foreign Service, he has been a Visiting Professor of Journalism in the University of Missouri. Among his five

previous books is *The Trailblazers*, an account of the exploration of western North America in Time-Life's Old West Series.

## Yosemite Trails

Exploring the High Sierra  
J. Smeaton Chase  
Tioga Publishing Company, 1987  
#2001, paper, \$9.95

J. Smeaton Chase, a British visitor turned resident of young and uncrowded California, explored the state by burro and horseback between 1911 and 1918. His lyrical word paintings of the natural landscape and careful observation of the native flora are interwoven with stories of pioneering settlers. This is early century travel literature at its best.

Smeaton Chase's descriptions are in the tradition of the writings of John Muir. Tioga Press's re-issue includes a new introduction and plant list by Carl Sharsmith, longtime NPS naturalist in Yosemite.

## Visiting Our Western National Parks

A Guidebook to the Parks West of the Continental Divide  
Excluding Alaska  
George P. Perkins  
Lorraine Press, 1987  
#17620, paper, \$12.95

Visiting Our Western National Parks is a guide to assist travelers in planning a trip to one or several of our western national parks. This unique little book has the following information on each park:

Detailed descriptions of camping and lodging facilities;

Summaries of hiking trails and a brief history;

A map and photographs; General information, including addresses and telephone numbers for obtaining information directly from the park; and

A special section of color photographs depicting some of our parks' wildflowers.

Author George P. Perkins spent two years researching this project and writing his book. He visited all the parks but two and most of them several times. He personally stayed in many of the campgrounds, toured most, and hiked a considerable number of trails during his visits. All the photographs, except those for whom credit is given, were taken by the author.

## California's National Parks

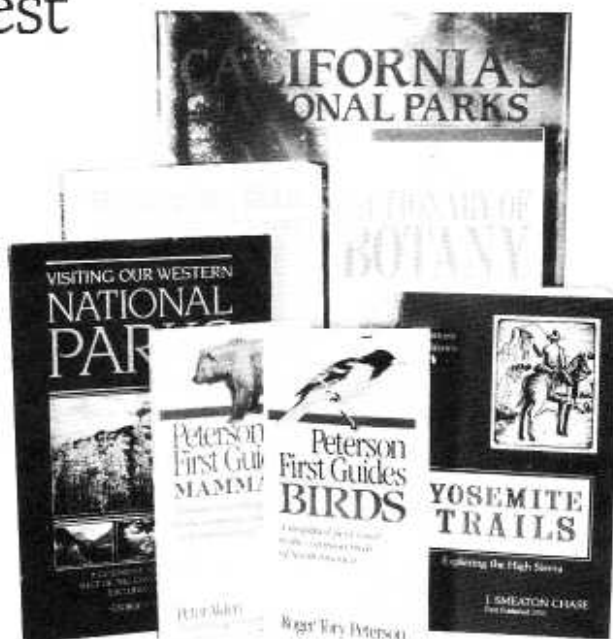
Jim Murfin  
Arch Cape Press, 1987  
#6678, cloth, \$19.95

There are six national parks in California, four in incredibly beautiful mountains and two overlooking the sea.

Two of them, Redwood and Sequoia National parks, contain almost all of the remaining stands of the giant trees that are as much a symbol of California as any man-made landmark. The list includes Lassen Volcanic National Park at the edge of the Cascades, a wonderland of forests and lakes, and the Channel Islands off the coast of Southern California, where seabirds and seals can be watched from 500-foot cliffs as the wild ocean crashes far below.

But the main event, as every Californian knows, is Yosemite, the second-oldest national park in America and considered by many to be the most beautiful in the world.

Ralph Waldo Emerson said of it "the greatest wonder is that we can see this and not wonder more." And all the wonders of Yosemite, Sequoia National Park, Kings Canyon National Park, Lassen, Redwood and the Channel Islands may be savored in the striking color photographs in the pages of this book.



All Items  
**15%**  
MEMBER DISCOUNT

A Christmas Selection

# THE Yosemite CATALOG

**A** Custom Compact Binoculars. A high-quality, lightweight model by Bushnell with excellent clarity, 7 x 26, long eye relief, field of view 36B, center focus, porro prism, weight 11 oz., exit pupil 3.7 #50451. \$239.95 — now \$190.00.

**B** Black Bear Hand-puppet. With soft, moveable head and legs to allow him to participate in the most meaningful of conversations and enough stuffing to allow him to join your stuffed animals when you're not around, this realistic charmer is ready to entertain young and old alike. 11" tall, hand washable. #50200. \$28.00 — now \$22.00.

**C** No-Frills Bear. This bear is strictly "back-to-basics" — no plush, no frills, just plain wrap! In fact, he carries the "No Frills Seal of Approval" on his chest for all to see. 10 inches tall. #50230. \$8.00 — now \$6.50.



A



**Y**ou will find something more in woods than in books. Trees and stones will teach you that which you can never learn from masters. — ST. BERNARD

**D** The 1988 Yosemite Calendar. This beautiful full-color wall calendar has become a favorite of Yosemite lovers. 15 stunning photographs are included, and the calendar measures 10" x 13". For 1988, the writings of naturalists and pioneer environmentalists are featured. #4180. \$8.95.



**YOSEMITE**  
1988 CALENDAR

D



C

**E** Images of Yosemite Notecards. Eight classic Ansel Adams views entitled "Images of Yosemite" create a stunning black and white notecard collection. The duotone process has allowed a remarkably high quality reproduction of the photographs. These distinguished cards come boxed in a set of 8 different scenes printed on folded 5" x 7" cards with envelopes. #50101. \$8.50.

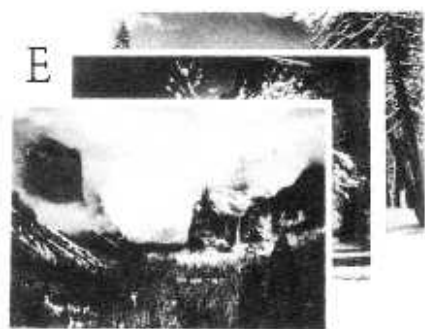
**F** Christmas Card Assortment. Send your holiday wishes this Christmas on tasteful cards by Ansel Adams. Eight striking black and white images are boxed in each Christmas assortment. The 5" x 7" cards feature an inscription reading "Season's Greetings" in red ink; envelopes included. #50110. \$8.50.



B



F



E

# Yosemite CATALOG

**G** Yosemite Association Cap. Complete your outdoor wardrobe with this trendy item from the Association collection! It's the perfect hat for a hot, sunny day in the great outdoors—mesh fabric to keep a cool head, a generous bill to shade your face, and adjustable strap in the back to insure a good fit for everyone. All of this plus the Yosemite Association patch to let everyone know what your favorite organization is! Brown with white accent. #1600, \$6.00.



**H** Yosemite Association Mug. This distinctive and functional white ceramic mug has our logo and name imprinted in brown. Holds eight ounces of your favorite beverage. #1625, \$5.00.

**I** Yosemite Fund Mug. This mug is decorated with the newly-designed scratchboard logo for use in conjunction with Yosemite Association's fundraising effort. White with black design, eight ounce capacity. #1626, \$5.00.



J



# Yosemite Association

L



dark brown and white Yosemite Association patch, the Pelican Pouch measures 8 x 5 x 2 1/4 inches. #1690, \$11.95.

**L** Yosemite Association Decals and Patches. Our association logo, depicting Half Dome is offered to our members in these two useful forms. Help announce your affiliation with our organization to others by purchasing and using Yosemite Association patches and decals. Patch #1635, \$1.50; Decal #1636, \$1.00.

**M** Yosemite Association T-Shirts. Comfortable, 100% cotton, light tan colored Hanes "Beefy-T" shirts are printed with the Association's Half Dome logo in brown.

*Child sizes (short sleeve):* small, #1650, medium #1651, and large #1652, \$7.05.

*Adult sizes (short sleeve):* small #1653, medium #1654, large #1655 and extra-large #1656, \$9.40; *(long sleeve):* small #1657, medium #1658, large #1659 and extra-large #1660, \$11.75.

**K** Pelican Pouch, Wilderness Belt Bag. The Pelican Pouch is not only perfect for carrying field guides, but also offers instant access to all the small items that are usually buried in your pack—pocket camera, lenses, maps, or your favorite trail mix! The Pouch is designed with front snap fasteners on the straps. This allows comfortable positioning on your belt—even between belt loops; no need to take your belt off first. The material is high quality Cordura pack cloth with a waterproof coating on one side. Beige with the



M

## Order Form

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## Sierra Sunset

Continued from page 7

the red is gone (scattered), the show is over (almost).

### Alpine Glow

Alpine glow is a phenomenon of refracted light and scattering. The atmosphere acts like a lens that is lying on its side. After the direct beam radiation of the sun is no longer striking the rocks, the extraneous light from the sun is bent through the atmosphere leaving the impression of a salmon colored afterglow on the mountains. This afterglow may last for quite a while or not be

seen at all depending on the amount of Mie scatter (from larger particles in the air). Mie scatter also results in sunsets that create more subdued colors on the rocks. That is, the more pollution (dirt) in the air over the central valley of California, and the higher the inversion layer (which allows the dirt to rise), the weaker will be the sunset colors. There will still be the same *order* of color change, but the colors will be less intense if there is a lot of Mie scatter or atmospheric absorption of the solar beam. Obviously, the best (most vivid) sunset colors will be seen after an afternoon thunderstorm, or on a cold winter

day when the atmospheric dirt is held at lower levels in the atmosphere and the air over the Sierra is at its cleanest.

### The Earth's Shadow

A seldom noticed, but interesting final treat on a clear night, when one has an unobstructed eastern horizon is the earth's shadow. It can be "seen" after the alpine glow lifts off of the mountain peaks.

As you look at the part of the sky *opposite* (180° from) the setting place of the sun (i.e.) east, you will see: 1) the blue sky above, 2) the pink or salmon color of the alpine glow as it "lifts" off of the

high sierra, and 3) the "clear" grey-blue color below the pink. This is the earth's shadow being cast out into space (it even appears to be curved). One really cannot "see" a shadow unless it is cast on something, but the *lack* of direct beam radiation indicates its presence, and it is easily seen when pointed out.

Learning and explaining why the colors change have not spoiled my enjoyment of the Yosemite sunset. For 15 summers I have had the pleasure of speaking at the sunset program at Glacier Point. Every time that I do, for a brief moment, I am 14 years old at Vogelsang High Sierra Camp.

## New Members

We would like to welcome to the Yosemite Association the following fine persons who became members within the past three months. Your support is greatly appreciated.

### Regular Members

Laura Abrams, Tom Accardo, Rakesh Agarwal, Margaret Ahrendt, June Albano, Augustas Anderson, Kathryn Anderson, Robert Ashley, Gordon Austman Rod & Gayle Baker, Robert Bangham Arthur Barabas, Lesley Barncard, George Bart, John B Barra, Samuel Barron Jr, Francis Behan, Donald L Bell Judith Bell, Rick Beltran, William Bender, Arthur & Jane Bergen, Steve Bernbach, Muriel Beroza, Juliann Blake, Daniel & Judith Bloom, Frederick & Julie Bohmfalk, Pamela Bowers, Bonni Renee Bredesen, Eugene & Julia Breitenstein, David Allen Breninger, Robert Brister, Ellen Broach, Jan Brown, Capt Timothy & Maj Linda Brown, Pat Brunell, Phillip Dean & Patti Pepper Buck, Gary & Diana Bulanti, George Burwell, Donald Butwill, Annette Catamec, Gary Christy, Janet Claypoole, Valerie & Brian Cole, Mr & Mrs Robert Courtney, Sanda Craiu, John & Betty Creger, Jane Cross, Deborah Crouse, James & Cynthia Cullen, Billie Cushway, Marilyn D'Amico, Joan Davis, Jackie De Camp, Tony & Joan deBellis, Kenneth Densley, Gerald & Martha DeRuntz, John Diefenderfer, Mr & Mrs R J Dolchanczyk, Chris Dresden, Inge Dresden, Franklin DuMonlin, Audrey Dye, Patricia Eastwood, Richard Eckert, Kenneth & Julia Edwards, Jennifer Engstrand, Marian Ensor, Gilbert Erickson, Marjorie Lakin Erickson, Becky Erlanson, Lillian Estrada, Lori Evans, Jonathan Everett, Burley Johnson Family, Judy Fessenden, S A & Margaret Fioletta, Janet Foote, Jeffrey Fraley, Mr & Mrs John R. Freeman, Mr & Mrs Gordon J Frey, Norma A Fritsche, Mrs Jinny Fruin, Jeff & Diane Galyen, Jean L. Garner, Loraine Gaulke, Denise Murphy Gedrimas, Richard M Georges, Winifred Gibson, George Giddings, John & Lydia Gomez, Alice T Greenwald, B J Griffin, Mary Kay

Gromnis, Clark Louis Grussin, Deborah & Richard Gunther, Kay Gupptill, Robert Hagen, Thomas Mark & Mary Haldorse, Leslie Haness, Michael Hansen, Ann Hardy, Robert A Harriman, Norma Harris, Dr & Mrs Robert Harwood, Jack & Jackie Hawkins, Jason Heine, George Heller, Amber Herrel, Nicolette Hightower, Maribet Hilario, Henry Hill, William Larry Hodge, George & Karen Hoekstra, Ben Holt, C J Hormann, Cherry Payne & Bob Howard, Marjorie Howard-Jones, Jody Hudec, Stephanie Hughs, Carol Huhn, Sherry Hull, Philip Hung, Ken Ingram, Annette Irvine, Mrs Arvela Jackson, Dennis & Kate James, Keith Johnson, Signe Johnson, Opal Jones, Margaret Jose, J J Kaiser, Richard & Patricia Kaylor, James Kelch, April Keley, Joyce Keller, Linda Kelly, Joseph & Elaine Kilanowski, John Kirkendall, Harry & Karen Kisseleff, Gloria Klaparda, Stella A Klein, Everett Klipp, Jean Klohe, Dale Knox, Elliott Kolker, Michaelene Krey, Fay Krooth, Wanda Kuenzil, Patricia Kurtz, Keith Kussmal, Kathleen LaFleur, Steven Laine, Robert J Lang, Titi Lanfield, Francis & Joanna LaVallee, Kay & Gary Leach, David Leonardo, Howard Level, Jack Leon Lewis MD, Patricia Lobner, Bernie Lumm, Josah & Mary Maesca, Brad Maring, Mike & Elena Mariscal, Marina Martinez, Mr & Mrs Harry Matlock, James & Irene Maxwell, Michelle D Mazure, Randolph McCreight, Dorothy McGinnis, Beth McGuire, Christine Meleg, Dr & Mrs Lawrence Meredith, Gene Merlino, Timothy & Jeanne Mestaz, Jennifer Milano, Carla B Miles, Logan & Betty Miles, Chris Miller, Henry Miller, Keith and Kristin Miller, Steven R Miller, Dorothy Mlcoch, Delia Moonrider, Karen S Moore, John Morehead, Jeff Morris, Ron & Cathie Mullin, Leonard Muni, Jane Murray, Kristine Nardello, Donald Nelson, Ruth Nelson, Nina Nigh, Donald North, Kathleen Orr, Charles Osterlind, Judy Palmer, Rebecca Palton, Toni Parnell, Melba Pastre, Alec & Marilyn Penny, Mike & Anne Petrovich, Roland Pfeifer, Sherry Platt, Kenneth Pinnon, Anne M Pitta, Don Place, Virginia Plattner, Peter Pollaczek, Mr & Mrs E G Pomeroy, Vera Postel, Frank Poulsen, Mary K Prentice, Felice S

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