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THIRTY-TWO PAGES OF PLATES

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Sierra Club Bulletin

The first ascent of the Leaning Tower's west face: an amazing story of expeditionary rock climbing

Realm of the Overhang

By Allan Macdonald

Dawn, on the last day of 1960, was cold, clear, and ominous. Although no snow had fallen, Yosemite Valley felt the hush of winter. The friendly burble of rushing water was gone. Bridalveil Fall hung above us in icy sheets, while the surrounding peaks retreated into silence, their smooth granite walls gray and cold. In these austere and solemn surroundings, we began one of the greatest adventures of our lives.

We were headed for the Leaning Tower,[1] an impressive peak. Only 1860 feet above the Valley floor, its height is not great by Yosemite standards. But height is only one measure of a mountain. The severe and continuous overhang of the Tower's west face presents an extreme in difficult climbing. It might be compared to the Matterhorn in Whymper's day—a step beyond what any one had done. In the words of many climbers it was "for the next generation."

Considering the wall, we thought it seemed obvious that the ascent of the Tower would extend over many days, even weeks, causing supply and organizational problems encountered only in major mountaineering expeditions. A new method of climbing, introduced in the ascent of El Capitan's south buttress, would be required—expeditionary rock climbing.

Such a climb would also require a special type of leader. Without question, the perfect man for the job was Warren Harding, whose first ascents on El Capitan, the Washington Column, and many lesser known peaks are counted among the most difficult in the United States. Not only is he

a superb climber possessing exceptional endurance, but he has experience, maturity, and organizational ability as well.

In the fall of 1960, Warren, ever in search of more daring struggles, turned his attention to the Tower's west face. The unattempted, seemingly unclimbable wall had offered a challenge he couldn't resist.

Warren led off into the gloomy forest beneath the west face, his wiry body dwarfed under a huge pack. Next, as porter, came Les Wilson, an old climbing friend of mine. I brought up the rear, following their intricate path through the giant talus boulders. The Tower loomed above us, massive and overpowering.

Across the valley, the top of mighty "El Cap" was catching the first rays of light as we reached a small ledge that traverses the face, separating it into upper and lower halves.[2] The lower, sloping wall is almost vertical; above the ledge, it bulges sickeningly out into space, overhanging the entire distance to the summit in one grand sweep. Above a stunted tree, 150 feet across the ledge, several small bolts (placed earlier by Warren) projected from the wall in a line 60 feet high. Above these, a roof extending out from the cliff, which had stopped a previous try, posed our first real climbing problem. A thin but strong nylon rope, suspended from the topmost bolt, allowed us to ascend by prusik technique[3] that portion of the wall already climbed.

Warren was soon ready for this airy trip up. With professional ease he stepped off the ledge into space to hang suspended 15 feet from the wall and 400 feet above the ground. He rose, rhythmically moving the prusik knots higher and higher, while a small breeze set the whole system, climber and rope, swaying like a giant pendulum.

In fifteen minutes he reached the high point where the serious climbing began up the right side of the roof. Placing direct-aid pitons behind a very loose flake of rock, Warren found that each piton he put in threatened to dislodge the one below it, or worse, the flake itself. Finally, to the great relief of Les and me, he changed to bolts. The angle at this point was more than 120 degrees. Warren worked tediously with rawl drill and hammer. After twenty minutes of back-breaking work caused by the constant tension of the rope and back belt around his waist, he excavated a tiny hole one-inch deep and ¼-inch in diameter.This effort was so exhausting that many times Warren would collapse quietly in his slings, head and arms hanging down in complete rest.

Allan Macdonald of Berkeley began his climbing four years ago in the Sierra Club's rock climbing school. He has made more than 50 climbs in Yosemite, including seven first ascents. He has also done more than 30 climbs in Pinnacles National Monument. Married, with two children, he works in the Advertising Department of the Standard Oil Company of California.

After pounding in a small expansion bolt, he gained three more feet. Just above his head was another loose flake. In delicate balance, he carefully tested it. Deciding against pitons, he prepared to place another bolt, when without warning the flake broke off and crashed down on his head.

"Dammit! Dammit!" Warren's angry and painful words broke the silence.

"Warren! What happened? Are you hurt?"

A moan was the only reply.

I tied off the belay line and got out prusik slings. If he was unable to help himself we had only a short time to reach him before he would strangle in his own safety rope.

"Warren!" Les yelled again.

"My neck. I think it's broken."

"Do you want me to come up and lower you down?" I called.

"I don't know. Let me rest a second."

Small flecks of blood floated down. "You'd better go up, Al," Les said.

What a stinking mess, I thought. With adrenalin and butterflies both working on me at once, I tied the prusik loops to the climbing rope.

"I think I can make it down okay," said Warren.

"Be sure," I said. "How's your neck? Can you move your head at all?"

"Yeah. All the way around. I can see pretty good too—two of everything."

What a relief! That sounded like the old Warren. The situation which could very easily have had disastrous results was under control. After a careful and cautious retreat, we rushed Warren to the hospital where six or seven stitches were required to close the wound in his head. This incident put a rather ominous end to our first attempt.

Second Attempt. June 17–24, 1961

Heat, tourists, and smoke. That was Yosemite in June of 1961. And I mean heat. It was the warmest we had ever felt it in the Valley. The Tower was just as forbidding as it had been last December, but in a different way. Now it was the wall of an oven, reflecting heat and glare, painful to touch.

Saturday and Sunday, Warren and I, with the help of Chris Westphal, carried piles of climbing equipment and supplies (including nylon ropes, pitons, carabiners, five gallons of water, food, and personal gear) to our starting ledge. It wasn't until Sunday afternoon that we actually continued up the climb itself.

Warren again took the lead and bolted until after dark, ending the first pitch 135 feet up an immense granite wall. He prusiked down, a small dark object silhouetted against the night, a creature from another world.

We found the climb back across the ledge using the fixed ropes particularly exhilarating at night. The entire ledge is decomposing, and the frequency with which footholds dislodged and crashed hundreds of feet below made us particularly cautious. We worked our way down the talus using headlamps, and finally arrived at the ranger station at 11 P.M. We were a bit discouraged to find no word yet from George Whitmore, who was to be the third member of our party.

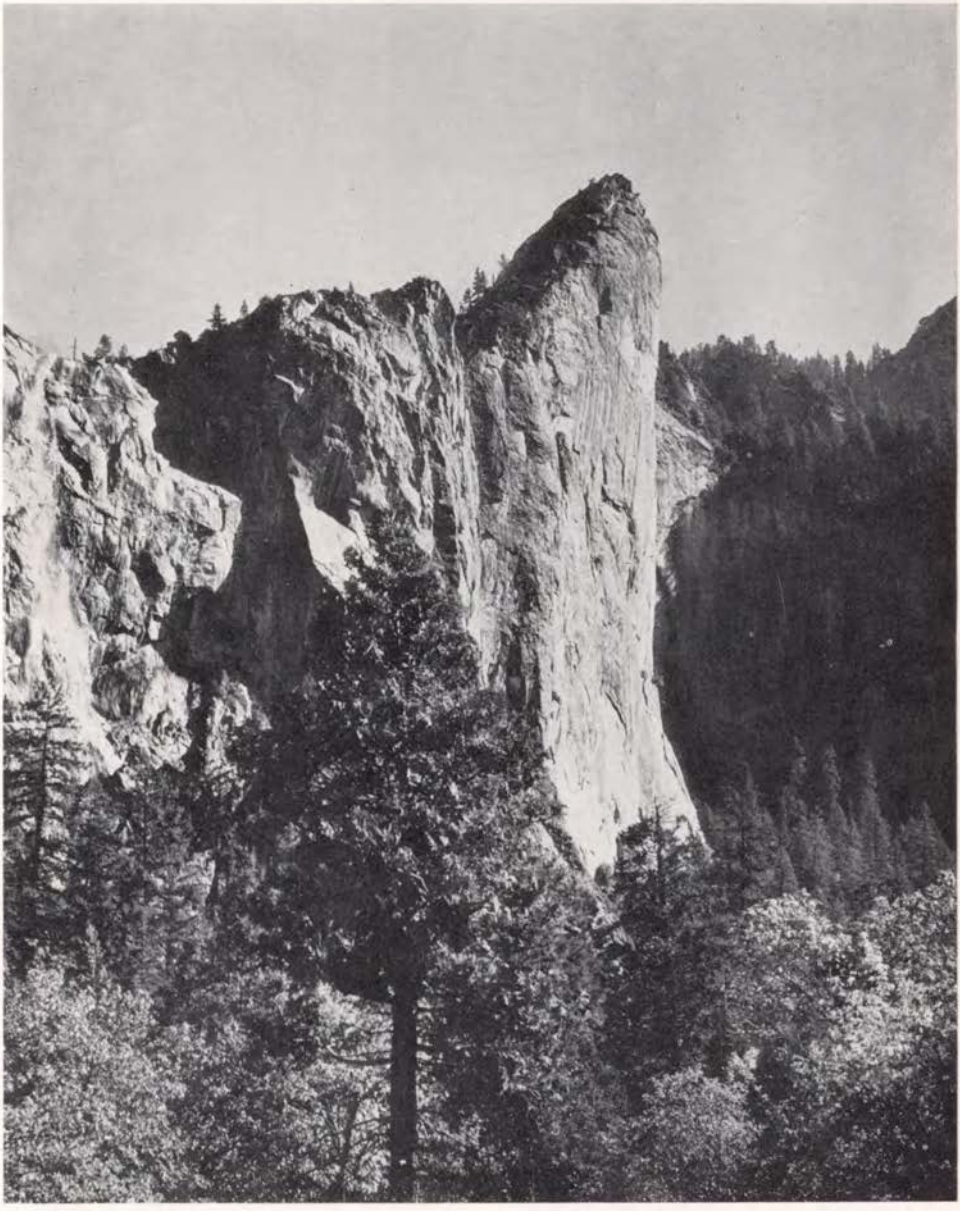
Nevertheless, on Monday Warren and I again climbed the talus, determined to force the route as high as we could. I was to belay in slings from the high point while Warren bolted above. I had only prusiked three or four times on a climb and nothing as severe as this. It was a mental block I had to overcome.

Taking a deep breath I pushed my chest prusik up and stepped off the ledge. Soon I was a full 25 feet from the wall! It was like being suspended from an airplane, a truly fantastic experience. When I reached the plumb line and began to rise, I started spinning like a twisted yo-yo. Warren, laughing like a madman, didn't help matters much. I discovered that if I concentrated solely on what I was doing and watched the rope right in front of me, the spinning wouldn't make me dizzy.

At the highest bolt I attached a wooden sling seat and was soon on belay to Warren. He came up and proceeded to pass over me in a tangle of ropes and slings. The overhanging wall pushed both of us out, impressing us with the prospect of a 500-foot free fall to the talus below. We started to laugh at what a ridiculous sight this must seem to the tourists watching from the Bridalveil Fall parking lot. It was rather strained laughter, though, as there was only one bolt holding the two of us.

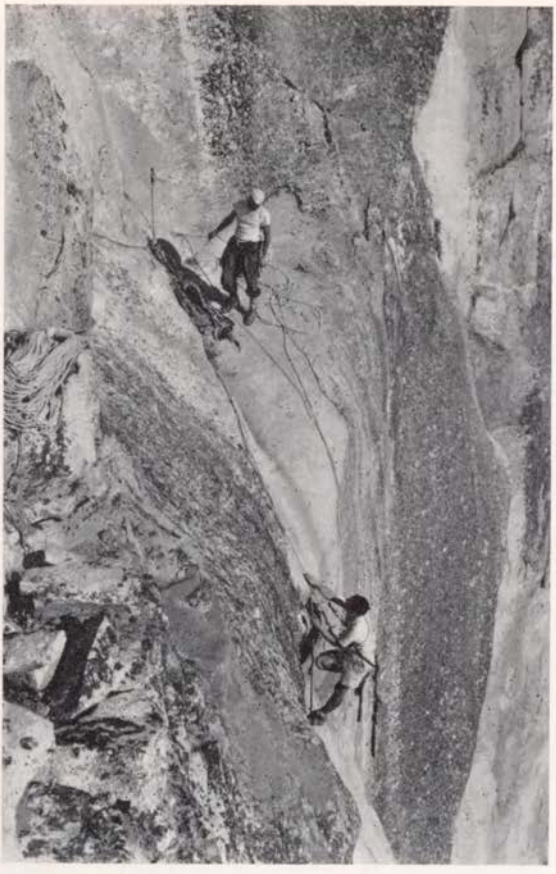
Warren set to work at once. With tremendous endurance he pounded and pounded on the rawl drill. The extreme overhanging angle of the wall placed a great strain on Warren's feet and back, allowing him only ten or twelve strokes of the hammer before a rest. He also got cramps in his hands from constantly holding the drill above his head. Occasionally, during a rest period, Warren would haul up a plastic bottle filled with repulsively warm orange juice. All the while the sun seared into us, stifling desire and ambition. I found myself dozing on the belay, the last thing I thought I'd ever do. After what seemed an eternity, the sun reached the horizon and retreat for the night was in order. Our reward for the day—only 35 feet of burning granite.

That night, still no word from George. We met Glen Denny, a tall redheaded climber who had proved himself on the face climbs of Mount Conness and Keeler Needle. We didn't have to talk hard to persuade him to accompany us. Refreshed and encouraged by this piece of good luck, we slept at Camp 4 in hopes of an early start Tuesday.



Leaning Tower, Yosemite National Park; Bridalveil Fall to the left.
Photograph by Dick Maroney

The Leaning Tower



Warren Harding and the author at Guano Ledge. Photograph by George Whitmore

Harding (above) and the author prusiking the first and second pitches. Photo taken from Tree Ledge by George Whitmore

Prusiking is a technique for ascending a fixed rope. Chest and foot slings are attached to the rope by prusik knots—friction hitches which can be pushed up the rope but which, if any strain is applied, will not slip down. Placing all his weight in one sling, the climber can then push the other sling higher up the rope. Photo by Dick Maroney

On the Tower, ledges for resting and sleeping are few and far between. Warren Harding, under a hot afternoon sun, sleeping in his slings. Photo by Glen Denny

Warren Harding, summit prusik. Photo by Glen Denny

In the morning, Glen and Warren started up the talus ahead of me as they would be climbing today. Our ascent was beginning to collect tourists like flies. One man, a tanned, bearded fellow, started up the talus behind me. It was George! At last the climbing party was complete.

Since George would be on the starting ledge, this gave me the day free to photograph and watch the climb from below like a tourist. Borrowing binoculars and eavesdropping, I had a very interesting and enjoyable afternoon. One older fellow had a telescope set up that could focus on Warren's ear—absolutely unbelievable. Comments varied from "crazy fools" to the most elaborate but erroneous descriptions of "what was going on up there." I was amazed at how misinformed most people are about climbing. Some actually believed that we stood on the ledge and threw the rope up the cliff, and that after the rope mystically attached itself to the rock, we pulled ourselves up hand over hand.

By Wednesday Warren had reached the end of the second pitch beneath a large overhang. The three bolts to which he attached the second fixed line were bad, and I decided to belay from the first anchor bolt. High above, Warren continued the lead, while George, below, started up the first fixed line to straighten out some tangled ropes. While adjusting my belay seat I noticed white dust on my pant legs. My anchor bolt had bent down and appeared to be coming out. I shouted a warning and quickly stepped up into a sling attached to the bolt above. George, hanging in space below, set an Olympic prusik record for descending.

With a wildly beating heart I watched Warren lower the bolt kit down on the hauling line. I placed another ⅜-inch bolt and tied the two anchors together. Everything secure, a moment of anguish had passed.

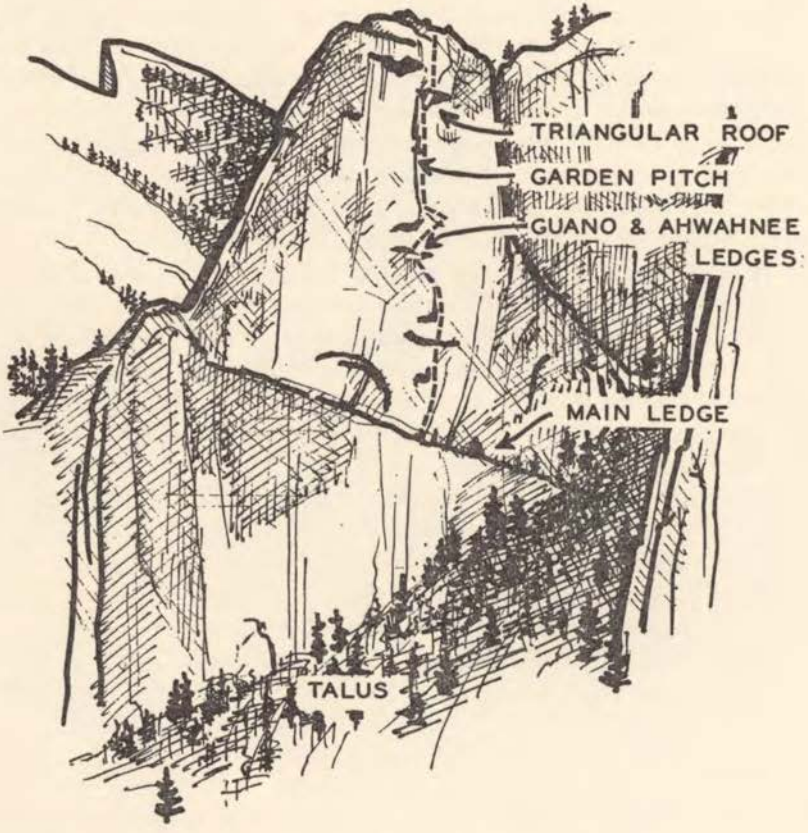
Warren turned the overhang to the right and reached the beginning of a flaky crack where he ended the third pitch. I prusiked up the climbing rope and took out the bolts between us. We were short on bolt hangers and had to re-use them above. The bolts came out so easily I wondered if they would hold even a short fall.

It was 5:30 P.M. when, hot and tired, I reached the upper belay bolts. Sweat poured out of us and the warm orange juice couldn't quench our thirst. We decided against climbing on into the night and prusiked down.

Thursday, George and I awoke to sounds of tourists arriving in cars. News of the climb was really spreading. We met a television news photographer and carried his cameras to the beginning of the ledge where he spent the day photographing.

Above, Warren and Glen were hard at work on the flaky crack. Alternating pitons and bolts they climbed on through the day with the temperature hovering around 105 degrees. Since they were high up on the wall now, they decided to push on into the night and take advantage of

the cooler hours. I waited at the traverse ledge by the hauling line, and George found a hole between two talus boulders 500 feet below. The acoustics were such that the climbing party could not talk directly to me, but we could relay messages with George as middleman. George promptly fell asleep, however, considerably confusing matters.



The night was beautiful—every star in sight. From above, the steady tap . . . tap . . . tap of bolts being driven kept me company. Garbled messages echoed off the buttress to the west. It wasn't until 3 A.M. that the noise stopped and I could lie down on the narrow ledge to catch a quick nap before morning.

Sometime that night, Warren and Glen had reached a sloping ledge they named "Guano" because of the birds' nests in the overhangs directly above. A 20-foot traverse to the left led to another ledge we called "Ahwahnee." Fortunately, Ahwahnee had dished-out sleeping places and

was one of the best bivouac ledges we had ever seen. It was a monumental piece of luck and a real dent in the Tower's armor.

When I awoke Friday morning I climbed down to find George. After our short breakfast George yelled up to Warren, 1,000 feet higher, "What's it look like above?"

There was a long pause and a discouraging answer floated back, "It looks bad—real bad!" Our hearts dropped. Surely it couldn't be as hard as the portion we had just climbed. But above, the Tower's defenses multiplied—blank overhanging walls with small roofs jutting out here and there and near the summit a tremendous triangular overhang. If we could have tipped the Tower upside down it would have made an easy fifth-class climb.

George prusiked up with food and water and straightened out the hauling lines, which had become horribly tangled during the night. I followed, taking out more bolts on the fourth and fifth pitches, arriving on Guano in the afternoon.

The exhausted faces that met me showed defeat. The wall above looked unbelievably difficult. We couldn't go on. The suffocating heat plus the strenuous climbing and logistical problems had beaten us. Glen and I prusiked down by nightfall, and Warren and George came down the next day. Warren had been leading during the last six days in terribly hot weather and climbing all night Thursday, truly an incredible show of tenacity and endurance.

To escape the heat we piled all the climbing gear in George's car and sped to Tuolumne Meadows where we sorted the equipment on the cool grass. After lunch we headed home. It would be three months before we struggled on the great wall again.

Third Attempt. October 7–13, 1961

With renewed enthusiasm we spent the weekend of September 30, 1961, getting ready for our next assault. Saturday, Glen and I hauled supplies to Guano after first ascending the fixed ropes we had left last June. Warren tied on loads below while Dick Maroney, a photographer, documented the climb. George, much to our disappointment, was unable to come because of business commitments.

With blistering hands we managed to pull up five heavy loads. Warren joined us on the ledge in the evening, and we spent a glorious night on Ahwahnee with a candle weirdly illuminating the ledge and casting giant shadows on the wall. We felt an immense sense of detachment and adventure—only a single nylon line connecting our world with the one below.

Warren had to leave for his home in Sacramento early Sunday morn-

ing, while Glen and I remained to rig a pulley system to ease the burden of hauling. When this chore was done we prusiked down (rappeling was impossible as the fixed ropes were pulled tight against the cliff to prevent our spinning on the way up) and reached Berkeley by dark, satisfied that we were ready for the big push, a week later.

THE Tower's day of reckoning was approaching. We carried approximately 200 pounds of food and water as well as climbing equipment to the talus directly beneath Guano Ledge. Our food supply was composed of everything imaginable, including both canned and perishable foods from pomegranates to sardines. We took approximately 12 gallons of water, most of which we converted to Kool-Aid. Among the climbing equipment were drills, bolts, bolt hangers, all sizes of pitons, carabiners, 600 feet of 7/16-inch nylon climbing ropes and 1200 feet of 3/8-inch nylon hauling line. Ahwahnee Ledge fortunately was large enough to accommodate sleeping bags, so these were added to the list. All that remained was to get this huge mass up the wall to the upper ledges.

Warren and I prusiked up, towing the 1200-foot hauling line. The rope didn't even touch the cliff! It hung straight to the talus. When we were ready to haul, Glen tied on a load and we tried to pull it up. It was no use.

"Too heavy! You'll have to lighten the load," we yelled down.

"There's only two gallons of water in it now," came the reply.

Hauling directly from the talus, about 1,000 feet, obviously wouldn't work. The weight of the rope, the load, and friction where the hauling line rubbed over Guano Ledge were more than Warren and I could lift. This meant Glen had to spend most of the night carrying loads 400 feet higher to the traversing ledge. Meanwhile, Warren and I, spending a comfortable night on Ahwahnee in sleeping bags, thought highly of Glen for his noble efforts.

It was clear, cold, and windy Sunday morning. Despite heavy clothing we almost froze getting ready to haul. Now it was Glen's turn to rest while Warren and I pulled thirteen loads up, almost covering Ahwahnee with supplies. Hauling is arm-tiring, exhausting work. Hand over hand . . . 25 feet . . . 50 feet . . . 75 feet . . . rest. Rope piles up on the ledge, making it difficult to move around. And finally, when you think you just can't pull any longer, a scrape is heard and a duffel bag with its small treasure appears over the edge.

That afternoon, while Warren was stocking Ahwahnee Ledge with food, a sudden gust of wind inflated my sleeping bag and flung it at him. He yelled and all but fell off the ledge getting out of the way. The

sleeping bag, defying gravity, floated upwards 50 feet out from the Tower like a flying carpet, then collapsed and dove madly toward the talus below. Glen thought a giant rock had broken loose and was headed his way. The bag eventually landed 40 feet up a tree about 100 feet out from the base of the cliff.

When Glen joined us, my sleeping bag in tow, he found me belaying Warren on the sixth pitch. Typical piton-placing went like this: a poor angle, a ¼-inch bolt, a tied-off knifeblade, an angle behind an expanding flake, a Simond channel that shifted and bent in half. It was a most formidable pitch. At almost every piton came the casual warning, "This one looks pretty bad. Be ready." Warren finally reached a point 100 feet diagonally up and to the right of Guano Ledge. He placed a small bolt there and prusiked down the climbing rope to the ledge well after dark. Glen, flashlight in hand, lit our way across to Ahwahnee.

As we had neglected to bring a primus stove with us, we had no warm meals. Sunday the main course was cold ravioli.

The next morning Warren resumed his lead with Glen belaying. Climbing a large deep crack using bong-bongs (over-sized angle pitons), he reached a belay stance on a small sloping foothold. It seemed like a ledge to us. We rated the pitch as very severe sixth class taking 34 pitons, three ¼-inch bolts, and eight hours to lead. Because this pitch was diagonal, the prusik was almost horizontal for some distance, placing a good strain on rather doubtful anchor bolts.

Glen had some trouble following Warren's lead, because a few of the pitons came out in his hand before he could step up on them. Nonetheless, he soon reached Warren and continued the lead diagonally left on six pitons, most of them knifeblades (an extremely small hard piton for hairline cracks), and three tiny 3/16-inch bolts. Darkness crept up the wall, bathing the Tower in splendid alpenglow, as Glen and Warren set up the ropes for retreat.

An early breakfast Tuesday morning meant that I was on belay before 8:30 A.M. Glen finished his lead, placing eleven more 3/16-inch bolts. At the end of the pitch he placed a good ⅜-inch bolt. For once the bolt drove in well, and the large flake of rock it was imbedded in seemed solid, too. A fixed rope was installed from this bolt to Guano Ledge 200 feet below.

Following this pitch I found that Glen, who is quite tall, had spread the pitons and bolts extremely far apart. Later, Warren and I talked about designing a "Denny-Arm," a device allowing you to make the absurd reaches prerequisite for anyone who follows Glen on a sixth-class lead. We left the bolts in on this pitch, but removed the hangers to re-use above. After reaching Glen, I was able to rappel down the

rope 180 feet before prusiking into the ledge became necessary (a distance of about 25 feet). It was a wild free rappel, however, and we stuck to prusiking during the remainder of the climb.

Humor was building up to gigantic proportions, and rarely a moment went by when one of us wasn't laughing at something. It was a good way to relieve tension and bound our party even more closely together.

From our high point on Tuesday, an overhanging "open book" filled with mud and weeds led onward, blocked from time to time by small roofs. On Wednesday I belayed in slings while Warren placed 29 pitons of moderate sixth class. The "Garden Pitch" was felt to be an appropriate name for this section. Warren would laugh and say, "Close eyes, please," as large masses of dirt and foliage rained down. A big, loose block of rock at the end of this pitch presented a problem. Somehow Warren managed to push it off. We could see the ground clearly and were sure no one was beneath the block. We also took the precaution of yelling "Rock!" several times before we let it go. The huge slab whooshed past me, 15 feet from the wall, and plummeted 1100 feet to the talus below. The loud crash echoed across the Valley. I removed the pitons from the pitch and we returned to Guano Ledge, dirty and worn out.

We were all getting tired of the cold food. Stew was on the menu for tonight. It had almost no taste and a cold, slimy feeling in my mouth. I ate very little, but Warren and Glen, having much sturdier stomachs than I, finished it off to the last drop. We passed another star-filled night telling climbing stories, a favorite pastime among climbers, and the party remained in high spirits.

Thursday was my rest day. Lying on my back on Ahwahnee Ledge, I soaked up sun and enjoyed the pleasurable experience of watching Warren and Glen climbing hundreds of feet above—a delicate ballet in air of two superb climbers.

Glen led a short, vertical pitch ending under the large triangular roof which is clearly visible from the Valley floor. This we were sure would be another crucial section. Warren took the lead. He was now climbing parallel to the ground in the most acrobatic fashion. The large bong-bong pitons he pounded in made strange music to accompany this impressive and awesome sight. The angle eased back to 140 degrees as he passed the outer edge of the roof. It was very strenuous sixth class. He climbed free the last 25 feet to two sloping ledges—the only portion of the climb made without direct aid.

Night was almost upon us. The Valley was already in shadow. From our separated points—Warren and Glen 500 feet above my spot on Ahwahnee Ledge—we held a council of war. We decided to bivouac

on the tiny upper ledges, anticipating reaching the summit the next day.

The sun was just setting as I hastily threw some dried and canned apricots, fruit juice, flashlight, and clothing into a hauling bag and cleaned up Ahwahnee Ledge. After a last look at this fabulous place that had been our home for so long, I began the long prusik up. In a relatively short time I reached the bottom of the overhang and remained there in slings while Glen cleaned the pitons out of the roof. He finally reached Warren and they tied off the prusik rope. After another delay they were ready to haul up the sack. I dropped the line with the sack attached; it flew out incredibly far before disappearing in the darkness.

I then began one of the most frightening prusiks I have ever done. The rope dropped down from me, went straight out past the lip of the overhang and ascended into the blackness beyond. I was even confused as to how to start. I put an extra prusik loop in my mouth, more to bite on to ease tension than anything else. My mind was numb from trying to calculate the strain I would be placing on the system. If I could just be sure everything would hold! Finally, I realized there was nothing else I could do, and soon I was in my slings dangling 30 feet out from the wall.

The headlights of cars were an infinite distance below as they turned and twisted along the road. I couldn't help thinking about the tourists inside. What a contrast—tomorrow they might be swimming in the Merced River or taking pictures of El Capitan and Yosemite Falls, while we would be struggling upward, reaching for the top and the culmination of our climbing careers. And all within sight of one another. I finally reached the ledges and found the rope tied off to a small ¼-inch bolt and two doubtful pitons. I shuddered when I thought of the strain I had just placed on them.

We spent a long, cold, moonlit night under attack by small birds. The apricots and Lifesavers (a very appropriate name) helped stave off hunger pains. No comfortable ledge like Ahwahnee this time, and no sleeping bags either. Warren told us that the route above looked like easier climbing, maybe fifth class. The overhanging open book that greeted us Friday morning proved him wrong.

Warren led the last pitch, overhanging to the end, up fairly difficult sixth class, using 20 pitons and 5 bolts. Glen cleaned the pitch of pitons and I made the last prusik to the beautiful summit arête.

And then we were up. The struggle was over and the Tower was ours.

Our first feeling was one of intense happiness, bubbling up inside so we felt like shouting for pure joy. This soon gave way to deeper emotions: a contentment that we had savored life at its fullest for a short while—life stripped to barest essentials. No matter what the future held for each

of us, the Tower had linked us in a bond of comradeship that most people never experience. We'll always feel respect and affection for that wall.

As we climbed down the sloping back side of the Tower, the soft play of afternoon sun and shadow gave a nostalgic beauty to the area. Between the Cathedral Rocks we paused for a last look at our huge granite friend, then plunged down into the dark depths of Gunsight Gully to a new world waiting below.

Final Statistics

There were 11 pitches up 1,000 feet of overhanging wall. We used approximately 111 bolts and 135 pitons, all for direct-aid climbing. The ascent was completed in 18 days spread over 10 months. Anyone intending to repeat the climb should bring a supply of ¼-inch bolts and nuts for the 3/16-inch bolts. It should also be noted that our anchor points were often bolts of questionable strength. Occasionally several had to be tied together to provide safe belay and anchor points. Since a normal retreat off this climb would be impossible, subsequent parties should carefully consider the problems involved before committing themselves to it or leave continuous fixed ropes, as we did, from base to summit.

REFERENCES

[1] First ascent of the Leaning Tower via the sloping eastern side is credited to Charles Michael (date unknown).

[2] First ascent of this spectacular ledge was made by Chuck and Ellen Wilts and G. B. Harr on Labor Day of 1957.

[3] Chest and foot slings of nylon are attached to a fixed line by prusik knots—friction hitches which can be pushed up the rope without difficulty, but which, if any strain is applied (e.g., someone standing in the sling) will not slip down the rope. A person can ascend a fixed rope by standing in each foot sling alternately, pushing the other up the rope.

EDITORIAL COMMENTS

The ascent described in the Macdonald article typifies a kind of Yosemite rock climbing which is qualitatively and quantitatively different from Valley climbing prior to 1948:

1. Length of the Climbs. The ascent of the Lost Arrow from its base (Salathé and Nelson) and the ascent of the north face of Sentinel Rock (Salathé and Steck) were done in five days of continuous climbing after some preparation of lower parts of the routes. In 1947 and 1950 these climbs were at the margin of length, strenuousness, and difficulty. Climbs in the new mode (the South Buttress of El Capitan—approximately 50 days, and the Leaning Tower here described—18 days) required contin-

uous climbing after very substantial preparatory work. If these times are compressed, and not spread as they were over months or years, they are of the magnitude of time involved in establishing camps, ferrying supplies, and ascending a major Himalayan peak. Indeed the logistic techniques on these climbs have a real resemblance to the relaying of supplies carried out on major peaks.

2. Demand for physical endurance. Most rock climbing is strenuous. In the current mode, however, leads of eight hours are not unusual. Piton pounding and bolt-hole drilling for such periods (even when leaders are occasionally alternated) is terribly demanding on strength, endurance, and body water. The levels and duration of fatigue and thirst accepted as routine are substantially above those of earlier periods.

3. Risks. Rock climbing, including that in the new mode, is seldom as hazardous as it seems. Notwithstanding this general qualification, the level of risks accepted in climbs such as the Leaning Tower is significantly higher than those of earlier years.

First of all there is an increased and more continuous dependence upon pitons and bolts of dubious quality and staying power, owing to the extreme limitation on alternative routes once a party is committed to a major face. Moreover, routes in the new mode are often selected *because* of their freedom from the more hospitable cracks, ledges, and rugosities which might provide frequent stances and occasional secure sections. There is inevitable compromise between speed and safety, since reliable bolts take longer to drill and set than marginal ones.

Second, in the case of accidents (and it should be noted that falls need not be considered accidents unless they are ill-prepared for or result in injuries), prompt and effective rescue efforts are unlikely. Last, is the difficulty in retreating back down a route or in reaching easier going by traversing. In the Leaning Tower climb, this difficulty was accepted knowingly and deliberately. With this acceptance of difficulty came the commitment to finish the climb over partially unknown ground or else face very serious difficulties should this ground prove impossible.[a] Even on this point, which gives the account of the Leaning Tower climb much of its sweaty-palmed fascination, it is not clear what the bases of the party's judgment were when they relied on admittedly poor anchors to secure their lines of retreat.[b] Warren Harding's decision may have been no less prudent than others he made during the course of the climb, given the party's skill, equipment, and what could be estimated of the difficulties of the final leads on this astonishing route.

These comments are meant to provide a context from which readers unfamiliar with Yosemite rock climbing may appreciate an account of a climb which typifies a new and distinct mode of mountaineering, and

which places its extraordinarily skillful and enduring practitioners at a frontier of mountaineering aspiration and achievement.

—ALFRED W. BAXTER

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[a] In reply to this point, Mr. Macdonald says: "We installed fixed ropes over the entire climb. Retreat would be easy—just a matter of prusiking down."

[b] In reply to this point, Mr. Macdonald says:

"We did not purposely (or accidentally) make bad anchor points. The granite on the climb was exceptionally hard (Warren remarked that it was 'the hardest granite he had ever seen'). The 3/8-inch rawl drills could not penetrate over three-quarters of an inch before they became channeled and dulled. Although the outer diameter of the hole was a perfect 3/8 of an inch, the shaft of a 3/8-inch Star dryvin bolt could not fit properly as the hole narrowed somewhat inside.

"We tried for hours to make secure anchors, occasionally drilling two or three holes before making one that we felt would suffice. Many times we put in a poor 3/8-inch bolt and backed it up with two or three 1/4-inch bolts in case it did pull out. We could seldom get even these smaller bolts in farther than an inch. The fearsome possibility of the anchors pulling out we had to accept as an 'objective danger.' With the given circumstances and equipment, we put in the safest anchors we possibly could."[c]

* * * * *

[c] As an ancient, old-mode rock climber, I think Al Macdonald makes Al Baxter's point, and that objective danger must remain what it always has been—hazard produced by the mountain, not by the mountaineer. This is in no way intended to detract; the achievement is a staggering one! D.R.B.

The Recession of Yosemite Valley

WILLIAM E. COLBY

AN OUTSTANDING ACCOMPLISHMENT of the Sierra Club in the early part of this century was getting the State of California to turn back control of Yosemite Valley to the United States. Congress in 1864 had given control of the Valley and one mile back from the rim to California in trust for the public, and President Lincoln had signed the bill. By a campfire in the Tuolumne Meadows region, John Muir, ably aided by Robert Underwood Johnson, an editor of *Century Magazine*, had conceived the idea of a great national park of more than 1,000 square miles surrounding the small state park. John Muir wrote appealing articles advocating the establishment of the national park which were published in *Century Magazine*. With all the cattle and timber and mining interests of that time, it seems incredible today that a park bill would have had a chance of passing, but it was put in so swiftly, and communication was so poor, that in 1890 the Yosemite National Park became a reality.

As soon as the existence of the park became generally known, it was subjected to violent attack, and it took all the strength and time of Muir and his friends to keep it from being abolished or materially limited in area. This opposition was so powerful and persistent that Johnson suggested to Muir the creation of an organization in California to help him ward off and take the brunt of these continuing and violent attacks. The Sierra Club was organized by John Muir and his friends in 1892 to help fight this continuing threat and also to serve as a rallying point for all mountaineers and lovers of the wilderness.

John Muir had lived in the Valley for many years and had observed that after the early days, when there was a fine state commission in charge of the administration of the Valley, succeeding appointments had become political rather than being based on the qualifications of the appointees. This poor quality of management, coupled with the fact that the state's appropriations for the upkeep of Yosemite Valley were woefully meager, induced Muir to advocate giving the Valley back to the federal government and making it a part of the great surrounding national park.

The chance to accomplish this arose when Muir was invited by Theodore Roosevelt to accompany him on a trip to the Valley in 1903. Since

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William E. Colby, Honorary President of the Sierra Club, served as a club director for 49 years. At the Seventh Biennial Wilderness Conference in 1961, he received the first annual John Muir Award, in recognition of his accomplishments in carrying forward Muir's historic work in preserving America's scenic resources.

Muir had already arranged with Professor Sargent of Harvard to take a trip to Asia to study its forests, he at first had decided not to accept the President's invitation. Fortunately, however, mutual friends persuaded him that he was missing a great opportunity to talk with the President and advance the cause of conservation. This won the day, and Muir reluctantly postponed his trip with Sargent and accepted the President's invitation. He and the President spent three days together, practically alone, traveling around Yosemite, and you may be sure that Muir's proposed recession of Yosemite was one of the main topics of their talks.

Upon his return Muir asked me as Secretary of the Sierra Club to take the steps necessary to accomplish the recession. I drafted a bill to be introduced in the coming session of the California legislature which would regrant to the United States the Valley as well as the Mariposa Grove of Big Trees which was also part of the original 1864 act. I also prepared, under John Muir's guidance, a small pamphlet which concisely stated the reasons for the recession. The statement in this pamphlet was made the official action of the club by the Board of Directors (see the *Sierra Club Bulletin*, 5:3 [1905], pp. 242–247). Copies of some leading editorials favorable to the project were included in the pamphlet, and it was widely distributed, with a copy going to each member of the legislature. And none too soon. William Waste, who was at that time presiding officer of the State Assembly, told me he had received a copy on his return home one day and had read it on his way to Oakland that evening. He was convinced that recession would be a good move, and when a newspaper reporter called him out of the Oakland meeting he was attending and asked him for his opinion on the subject, he was able to answer intelligently. But his views favorable to recession were not published because that newspaper's stand on the matter was adverse.

We had hardly got our pamphlet into the mails when the San Francisco *Examiner* devoted its entire front page to a large picture of Yosemite Falls with a statement underneath in large print intimating that to give Yosemite Valley back to the federal government would mean that citizens of California would have to go on their knees to Washington, D.C., and beg for permission to visit what was inside their state and rightfully theirs. Statements of all the people they could get to oppose the recession followed on inside pages. After this opening broadside, the paper devoted a page each day to adverse comment and material. The *Examiner* opposed recession so actively in large part because one of its eminent legal counsel had at one time been a member of the Yosemite State Park Commission and the *Examiner's* legal counsel still represented the Commission.

The other newspapers of the state were overwhelmingly in favor of recession. Only the *Examiner* and the *Lodi Sentinel* opposed it editorially. In spite of this, the *Examiner* was so influential that I realized the Sierra Club would need reinforcements.

I remembered that John Muir had in 1899 been a member of the "Harriman Expedition" to Alaska and that Harriman had become a great admirer of Muir. It was also common knowledge that the Southern Pacific Railroad Company, of which E. H. Harriman was President, had great influence in the California legislature. So I got in touch with Muir and suggested that he write to Harriman, stating our case in detail and requesting his help. Harriman responded at once and wired the company's chief counsel in California, who also had charge of its political problems, William Herrin, to help us in our fight as far as he could without prejudicing the interests of the company.

I called on Herrin and explained in detail the reasons for recession. He assured me that the company would do what it could for our cause, but that we must not get any idea that the company was going to fight our battle for us; the Sierra Club would have to work just as hard as if the railroad were not helping.

John Muir and I made nine trips together to Sacramento while the State Legislature was in session, to answer questions and try to convince members of the legislature of the advisability of recession. Each trip meant that we had to stay at least one night in Sacramento, for the day of rapid transit had not yet arrived. We were beholden to Robert Marshall, then in charge of the United States Geological Survey topographic mapmaking of the coast, and to his lovely wife, who were great friends of both of us. Marshall's home was in Sacramento but since he had come originally from Virginia, every evening as we arrived at his home about 11 P.M., he would have tall frosted glasses of mint julep awaiting us.

Another great friend on these trips, who was also a member of the Sierra Club, was Arthur Elston, at that time Secretary to Governor Pardee, and who knew all of the members of the legislature. He took us around introducing us.

We went to the Senate first, because it had the reputation of being less favorable to our cause than the Assembly. Since there were no rules requiring lobbyists to register, we walked right into the Senate Chamber before the Senate convened for the day. The first senator I met was an illiterate representative of a San Francisco slum district. I had some difficulty in explaining just what we wanted. Finally it dawned on him, and he answered very bluntly and positively, "Well I'm agin it." He had never heard of John Muir, and I realized that the opposition had

already reached him and given him a thorough brainwashing. However, when the time came we did not have to worry about his negative vote, because he and three other senators opposed to recession had taken bribes with marked money in connection with an insurance-bill scandal; two were convicted and the others fled the country, so none ever voted.

I was greatly discouraged with my first day of lobbying, realizing that the merits of the bill would have little to do with the outcome. I got a good lesson in practical politics, and I conferred frequently with Herrin, who was greatly amused and interested in my reactions.

On each of the nine trips to Sacramento, Muir and I thought the bill would come up for passage. But we later found out that the railroad wanted other issues out of the way before the final vote on the Recession Bill, when the legislators might be subjected to severe repercussions and reprisals. We did have great success in the Assembly, which voted in favor of recession, but the test in the Senate kept being postponed.

I told Herrin on one occasion that Senator Charles Shortridge of San Jose was giving us a lot of worry because he was a persuasive orator and was continually orating about "the loss of Golden Haired Girls, Golden Poppies," and practically everything of value in the "Golden State of California" if recession took place. His oratory amused Muir very much, for he would in fun imitate Shortridge. When I expressed to Herrin my great concern about Shortridge he said, "It is up to the Sierra Club to get Shortridge to vote in favor of the bill. Have all his constituents you can reach write and wire him to favor it." We went to work and "put on the heat," getting such men as David Starr Jordan, President of Stanford, to contact him.

One of the clever turns of politics which I learned was that certain senators who were notoriously controlled by the railroad company were loud in their opposition to recession. In this way the company kept the public and the newspapers guessing about which side the company really favored.

At last the fateful day arrived. Senator John B. Curtin of Tuolumne County was leading the opposition. He was an able lawyer and orator, well liked by the other senators. Since he was attorney for the transportation and other operators in Yosemite Valley, he had a financial interest in the outcome. He had spent many nights in the law library in the Capitol and had an entire day allocated to him when the final argument took place. His desk and desks adjoining his were piled high with law reports, especially those of the United States Supreme Court. Curtin had earlier successfully defended his right to drive his cattle on land he owned inside the national park, even though they strayed and grazed on adjoining government lands in the park. He spoke with all the venom

and spirit of one whose rights had been abused by the federal government. He made a great impression on his colleagues, and when we took a poll of the votes, we found we would probably lack one vote of having the necessary majority. When the vote was taken they were cast just as we had expected until it came to Shortridge. He arose and said:

"I have not changed my mind that this bill should not be passed, but so many of my valued constituents have urged me to vote for it that much against my convictions my vote will be in its favor."

This was the deciding vote, with none to spare. As a concession to Curtin the bill was amended to require the federal government to accept the regrant within a limited time; otherwise it would be ineffectual.

We naturally rejoiced and believed that our hard-fought battle had been won, but we little realized what troubles lay ahead of us. Representative Needham, the congressman in whose district Yosemite Valley was situated, introduced the bill in the U.S. House of Representatives in Washington, but when he tried to bring the bill up for a vote, Speaker Cannon refused to recognize him. This was in the days of this legislative czar whose favorable nod was essential before any bill could be even considered by the House. Cannon was opposed to the bill because he was a "watchdog of the Treasury"; any legislation which involved expense which he thought unnecessary met with his opposition. Needham wired me the disconcerting news. I at once got in touch with Muir and told him to get Harriman to assist us again. Harriman promptly did so and apparently had the same influence in Congress that he had in the State Legislature; in a very short time Needham was recognized by Cannon and the House passed the bill accepting recession.

Now we had to have the Senate go through the same procedure. Since Senator George C. Perkins, a charter member of the Sierra Club, who was next to the top in seniority, had charge of its passage in the Senate, we again thought our troubles were over. But again we had to learn that politics is an uncertain and devious game.

The bill was referred to the public lands committees in both houses. The chairman of the Senate committee was from Dakota and had visited Yosemite the summer previous. The little branch railroad from Merced to El Portal was a new line and was having differences with the Southern Pacific. It was rumored that the Southern Pacific wanted to acquire this branch line and that the El Portal line would not sell. In any event the branch road had enlisted the support of the Dakota Senator, who refused to report the bill out of committee for consideration.

Again Muir appealed to Harriman. Senator Perkins moved to substitute the Yosemite recession bill for a bill providing funds for the administration of the District of Columbia, and in this manner forced

the bill to the floor for consideration over the Dakota senator's opposition. The Yosemite bill carried in the Senate by a comfortable majority, and President Roosevelt signed it as he said he would when John Muir and he had talked the matter over in Yosemite in 1903.

The recession of the Valley was not an unqualified blessing, because the boundaries of Yosemite National Park were changed in the same bill to conform to topographic features, instead of rectangular township lines as the park was originally established. Everyone agreed that this change would be desirable and necessary from the standpoint of proper administration. A commission was appointed to recommend the new boundaries. Major H. M. Chittenden, of the Army, who had been in charge of Yellowstone National Park, was chairman and our great friend Robert Marshall and his assistant Bond were the other members. They held hearings and received evidence. To our great surprise, they recommended that all that region southeast of the headwaters of the Tuolumne and Merced river basins be eliminated from the park. Their reasons were that this outstanding scenic region—including the Minarets and Shadow Lake—was completely shut off from the Yosemite administrative area by the high crest separating the two areas; the committee had also received strong appeals from owners of mining interests in that area. The Sierra Club and John Muir opposed this exclusion and adopted a strong resolution objecting to it (*S.C.B.*, 5:3 [1905], pp. 250–251). We had had so much fighting over the Yosemite recession that our campaign against the change was not as vigorous as it otherwise would have been. Anyway, the area was eliminated. It must be returned and included in the park. This is future work for the Sierra Club. We should keep in mind, when we contemplate the battles that are being waged for conservation, that it is just as true today as it was over half a century ago, that the merits of a worthy cause oftentimes become obscured and thwarted by politics and personal prejudices.

As I look back on it all I wonder that I, as a young and struggling lawyer, gave so much of my time and energy to this legislative struggle. I not only neglected my law practice, but I was away from home and in Sacramento when our first child was born. Arthur Elston facetiously insisted that he should be named "Recession Bill." I realize that I devoted the time and thought I did because I was secretary of the club and was duty bound to do all in my power to advance its interests, but primarily I had become a disciple of John Muir and had become consecrated to the great work that he, as our unquestioned leader, was striving to accomplish. It was a great privilege to be working beside him. Throughout the fight for recession it was the constant and effective work of members and friends of the Sierra Club that won the battle.

Falls above Lonesome Lake and spire of Warbonnet Peak, Wyoming

Wyoming's Wind River Country

There is poetry in the name and in the place. For all its ruggedness, it is country that is easy to wander through, remote and little known. Camping, fishing, and mountaineering parties are only beginning to explore and enjoy its wild beauty.

EIGHT PHOTOGRAPHS BY PHILIP HYDE

Shore of
Big Sandy Lake

Band of 2500 sheep crossing Washakie Pass from the east

Sheep look picturesque, but their marks do not.

It seems unbelievable that here in 1962 one can see the processes continuing that produced the sad deserts of the Near East, the Middle East, and the sand flats of the High Sierra. Instead of the flower-filled meadows one would expect in this well-watered land, the grass is close-cropped, hillocks turning to sand, "beaten paths" truly beaten from hundreds of thousands of sheep's feet, topsoil on hillsides undercut as much as a foot and a half, ready to wash down at the next rain, stream beds gutted. Along the main driveways, the ground is as hard packed as if it had been pounded by a mechanical sheepsfoot roller; rain runs off as it would off cement.

An overgrazed meadow near Washakie Creek

The main sheep driveway near Meek's Lake. More than fifty thousand sheep use this driveway each year.

Grave Lake and Mount Hooker, the granite face left of the center dome

Definitions for Inner Space

By David Brower

Mark down one December day in 1962 as the time in history when a national magazine, *The New Yorker*, published a full-page ad offering an entire South Sea Island, a lazy glance away from Tahiti, to the first person having one and a quarter million dollars to spend in getting away from it all. Perhaps we should also mark that same day down as the last one on which man could afford to leave to whim the business of planning how to use the land.

The Sierra Club search for wild places to preserve and pleasant places to visit in summer has not yet reached quite so far as Tahiti, but members know that good places are getting scarcer and farther away, and that with the club's becoming of age this year—seventy, last June—more and more citizens are looking to the club to do something about inner space. If the heavens are to be cluttered, the feeling seems to be, at least let there be a few uncluttered places at the lower levels.

Not just *managed* open places, either. Maybe some New Yorkers orient toward Fifth Avenue instead of the Hudson because, as Theodora Kroeber remarked, "They didn't make the river and it annoys them." But several New Yorkers we know, and most other members of the Sierra Club, feel quite differently. They know that the things man does not make or manage are often rather pleasant and even worth fighting for. These things are the principal reasons for which the club exists as an organization. They need help, and I submit some definitions herewith that may lead to help.

1. A *citizen* is a person who "believes that the glory of the United States must rest and has rested upon a firmer foundation than that of her purely material resources"; who believes that "it is the love of country that has lighted and that keeps glowing the holy fire of patriotism," and believes "this love is excited, primarily, by the beauty of the country"; who believes that "we must not continue to convert the fairest land the sun shines upon into a desert of ugliness"; who believes that we have a choice and should choose permanently to "retain as a valuable national asset a considerable portion of the natural scenery which is so beneficently influential upon our lives, and not continue to substitute for it the

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In addition to his duties as Executive Director of the Sierra Club, David Brower is Vice-President of the Trustees for Conservation, with headquarters in San Francisco, a director of the Citizens Committee on Natural Resources, in Washington, D.C., and former Chairman of the Natural Resources Council of America, a forum of national conservation organizations aggregating three million members.

unnatural scenery of man's careless waste." The source of this definition is a statement as fresh today as when it was delivered at the White House Conference on Natural Resources in 1908 by J. Horace McFarland, then President of what was then the American Civic Association. I don't think he had much use for silt, slag, or slash, and that if he were alive today he would be gravely troubled by scatteration and by the general calcification we citizens are inflicting upon so much of the living land.

2. A *citizen-lobbyist* is the citizen who knows that government is not a spectator sport.

3. *Conservation*, as Nancy Newhall says, is humanity fighting for the future. The definition "wise use" is one to be wary of, for too often it emphasizes use at the expense of wisdom, and too often it is used to cover up a conviction that resources exist for the benefit, pleasure, and convenience primarily of the generation or two that first learn how to use them up. Conservation is the antithesis of growthmanship, of the game of strip poker with America's natural resources, in which today's citizens win the early hands and tomorrow's go threadbare. You have to be a little bold these days to wonder aloud about the virtues of ever-expanding economic growth. But arithmetic seems to give no other course. If our economic growth rate should be stepped up to 7 per cent, then a mere century from now we'd be using up resources at a thousand times the present speed. The present growth in population can easily supply the number of people needed to bring this havoc. Today the earth carries three billion with some struggle. In just 17 more years we'll get the fourth billion unless we learn to slow down—and 17 years, to those who recall V-J Day, isn't very long.

When it comes to resources, exponential growth curves are no good. They are a holdover from adolescence—at a time in civilization's history when we need a "steady state," as Paul Sears puts it. Not static, but *stable*; cognizant that certain resources are finite. Otherwise mankind will have had it.

So conservation is citizens fighting—and sacrificing a little—for the future.

4. *Natural Resources* are everything but man and his works. In the Conventional Wisdom they consist of renewables and nonrenewables, but this is more a conventional than a useful wisdom. Since civilization depends upon the progressive development, use, and extinguishing of resources, it makes sense to stress not renewal, but how easily we may substitute for a resource. If we run out of brick, we may use stone; we may often substitute aluminum for steel or copper; in due course we may process sea water for minerals rather than overturn earth for them. Our structures may grow taller rather than wider.

In all these examples we have an option. But when we lose wilderness, we shall be hard put to find a substitute for it. We have hardly yet begun to understand its delicately balanced living mechanisms. Without our tinkering with them, these have produced and can continue to produce a wealth of organic forms of unpredictable value. We have learned to identify and evaluate a pine, but we are far less sure of how the form of its needles evolved, or why its seeds do better if planted locally rather than far off. And we are really in the dark if we probe the soil beneath it, the formula of which is staggeringly complicated, bearing trace elements of long chains of life of many forms—mosses, fungi, molds, bacteria, insects, amphibians, reptiles, birds, mammals, flowering plants and shrubs, other trees.

The soil is still an all-but-unknown fabric, the earth's epithelium, upon which all life depends, including our own. It has extraordinary recovery powers—or so we think. So our predecessors thought in the Middle East, where man-made desert now surrounds the Cedars of Lebanon that once grew in profusion. So the Germans thought when, fooled by temporary increases in productivity, they went to monoculture of spruce not too long ago, and almost destroyed a resource in the process. We still seem to count terribly much on a power of renewal that may not take place in time.

The important question in the citizen's concept of natural resources is not, will something grow back in its stead, but how soon and how long will *enough* grow back, enough of the right variety and quality to meet long-range needs, if we pave or rip up too much of the earth's epithelium instead of seeking out substitutes in time? In the last analysis, then, the citizen who wishes to act needs to realize that many of the so-called renewable resources are not renewable but are vanishing with alarming speed.

5. *Wilderness* is partly defined in what I have already said. Some of our natural resources exist not to be used up, but to be re-used in perpetuity. One of them is the resource of sunshine, unintercepted by smog. Another is the water in the dark lakes, the underground store that can always be drawn upon if it isn't overdrawn. And one of them is wilderness, wherein the flow of life, the creative force, the evolutionary force, in all its myriad forms, has gone on since the beginning of life, essentially uninterrupted by man and his technology. This *un*interruption requires a lot of space, and a wide buffer around it, for nobody is more pervasive than man and his technology.

Wilderness, by definition, is not restorable.

6. *Open Space* is now engaging citizens and legislative bodies markedly, even though it's a fairly new term. Opinions vary widely about it.

A recent issue of *House & Home* says, "Most land shortage talk is nonsense—as any airplane flight can show you. . . . But suburban sprawl is proliferating land waste, dollar waste, time waste. . . . A thorough land survey, as Indianapolis has shown, can spot plenty of land ripe for housing."

I am uneasy about part of this, for I think that it can lead to a feeling that it is all right to close in on open space and for us to ravish the land, so long as we do it efficiently. I feel that it encourages interim makeshift at the cost of foresighted solution. It relaxes us into passing still more burden on to our children by piling on more and more people and pavement. It leads us into measuring land by the acres of its expanse rather than in the scant inches of miraculous thinness of living soil.

I may be wrong, but my airplane flights show me something quite different from "plenty of land ripe for housing." They remind me of a microbiologist's view of fungus: "Mushrooms are to the fungus organism much as apples are to the apple tree. The main body of the growing organism lies buried or otherwise concealed in the soil, the duff, or the litter where it is continually obtaining its nutrients, and only under the most favorable conditions does it produce the mushrooms."

The city is the fruiting body of the tree and the roots spread far; if the roots outrun their sustenance, the fruit dies. The Middle East is filled with evidence. Consider how far the organism of the city must reach for its nutrients. Then ask whether land-shortage talk is really quite nonsense. We may find that the land we thought was open is already fully at work serving the city and can be considered "ripe for housing" only at the city's peril.

Take the familiar term *watershed*. How many sheds, water and other, does a city have? How much land shortage have they created simply because they preëmpt land? Northwestern Connecticut, during prohibition days, was part of New York City's "applejack shed." Los Angeles once had an orange-juice shed within the city limits, but then it extended the shed into Arizona until Arizona, too, began to prefer ripe housing to ripe oranges. So Los Angeles extended its juice-shed to Florida, where a bad freeze can raise Los Angeles orange-juice prices in a mere two days.

Ripening houses make San Francisco's milk-shed retreat visibly every year. The coastal plains that bear almost all the world's artichokes have been considered as "ripe for housing" by a combination of developers who don't like artichokes and planners who think that soil is old-fashioned.

Open space is rapidly becoming either uninhabitable, or preëmpted for what people need besides roofs—water, for instance. How big would you say the watershed of Los Angeles is; how free for other development? Ask it of the people of Owens Valley, or of Northern California

counties, or of the upper Colorado Basin states. In Owens Valley there is a vast amount of empty land that once was not empty, back in the days when its water served local crops, not distant people of ever-increasing numbers.

The coast is not clear even in Alaska; it may look empty but an attempt to establish a new national forest wilderness there discloses that the forests are now part of Japan's pulp-shed. Unappeased, ever-growing hunger for resources now finds world powers grimly reaching across oceans into the same oil-shed—in the shadow of the mushroom cloud.

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If we share the appraisals implicit in these definitions, and if other citizens agree with us and act—so that government itself will act—then humanity will gain. I think humanity will gain even if other citizens *dis*agree with us, and, through disagreement, are stimulated to come up with a better solution than either side thought of in the first place. Humanity can lose through preoccupation, through apathy, through absentee citizenship, through adamant pursuit of a chain-letter or strip-poker economy. I fear that it *is* losing; it need not continue to do so.

I should like to end on an optimistic note by saying that the citizen, as a lobbyist, has a great talent and is doing a grand job for natural resources. But the truth must out; he isn't. Inner space will not survive too much preoccupation with objective coördination of all levels of government. Freedom has always required some bold action. We have time to save some still-beautiful land, but not too much time.

An eminent cultural historian and author of
The Human Prospect *among his many other books*
re-examines the prospect again with special reference
to a state that seems doomed to be most populous

California and the Human Prospect

By Lewis Mumford

The human prospect today is both brighter and darker than it has ever been in the historic ages. For the first time, mankind exists as a self-conscious collective entity, bound together by communication at the speed of light, and by transportation at the speed of sound; we command physical powers that were once locked in the depths of nature, and knowledge enough in every department of thought, if we had the good will and the social imagination to use it, not merely to free the race from the old threats of starvation and destitution, but to give to every human being on the planet the cultural resources for personal development and enjoyment that only a minority ever participated in on any scale in the past.

But at present these happy prospects are heavily overcast by well-justified fear and dismay. The very method of thinking that has made these advances possible, and the very technology that has brought them to the point of realization, are at the same time working in precisely the opposite direction. As our machines become more automatic, more intelligent, more self-governing, the life that they make possible in our communities becomes humanly less interesting, partly because we have transferred so many of our activities, even thought itself, to these mechanical agents. What is just as bad, the whole apparatus of power on which we necessarily depend has gotten out of control and is running away with us. As a result we have only replaced the old slavery of production with the new servitudes and compulsions of consumption; and in comparison with the power and resources now at our disposal, the net human gain has been dismally small. At any moment all our boasts of scientific proficiency and progress may be nullified by a man-made nuclear catastrophe, brought on by minds that have ceased to be able to deal with political realities because they themselves are encased in a system of abstractions and measurements useful only for the control of machines. Thus our power threatens to collapse into impotence—our creativity into total destruction.

I shall not, I hasten to assure you, end on this negative note; but it is necessary to begin here; for unless we take the full measure of the dangers that confront us, with open eyes, we shall not summon forth the

human energies that will be necessary to overcome them. The threat of wholesale nuclear extermination, on a scale that might permanently mutilate even that part of the human race which escaped immediate destruction, is only the most spectacular example of the negative results produced by science and technics when they are divorced from any other human purpose than their own propensity to increase knowledge and power, and expand the use of their own special products in a fashion profitable to the producer.

But we are in the midst of other explosions, other forms of destruction, actual, not just threatened, that will be just as fatal as long as they go in the present fashion: the population explosion, the freeway explosion, the recreation explosion, the suburban explosion (or should one say the "slurban" explosion?) are all working toward the same blank goal—that of creating more and more featureless landscapes, populated by more and more featureless people. Never before has any country possessed such a surplus of wealth, energy, food, and natural resources as the United States, and in particular, this state of California. But in addressing ourselves solely to the increase of power, profit, and prestige, we have failed to develop a varied, many-sided culture, a culture based on the realities of life itself, on human growth in a biologically sound and socially stimulating environment, on sexual maturation and a good family life, on disciplined emotional expression in the arts and in daily practice, on constant citizen participation in the public affairs of the community, for the sake of human association as well as for the practical and cultural ends. Rather, all our dominant forces today now tend to cramp and dwarf our life, to sterilize and increasingly dehumanize our activities, when they might be hugely increasing our actual wealth and our real enjoyment.

Now, where the machine takes precedence of the man, and where all activities and values that sustain the human spirit are subordinated to making money and privately devouring only such goods as money will buy, even the physical environment tends to become degraded and inefficient. To say that we have not made the most of our opportunities is putting the case mildly: disorder, blight, dingy mediocrity, screaming neon-lighted vulgarity, are spreading everywhere, producing, as I said, an empty life, filled with false vitality expressed in occasional outbreaks of violence and lust, either in brutal action or in fantasy.

EVER SINCE I visited the ancient Italian town of Pompeii, buried under the ashes of Vesuvius in A.D. 79, I have found myself comparing the dead city that has been brought to life there with the seemingly live cities that we are living in—or more often trying to get away from—in America. This comparison continues to haunt me. The landscape around

Pompeii is not too different from that of many parts of California; the vineyards and the olive groves and wheat fields in Roman times were no more productive. Yet this little provincial town, of some twenty-five thousand inhabitants, produced such an orderly and coherent and esthetically animated life that even in its ruined state it gives a less ruinous impression than the central areas of most American cities of ten times that population. The Pompeiian frescos and mosaics are famous in the museums of Europe and when one compares the noble Forum of Pompeii with the jumbled junk-edged surroundings of San Francisco's own Civic Center, when one considers the amount of space and fine building given to Pompeii's temples, its markets, its law courts, its public baths, its stadium, its handsome theater, all conceived and built on the human scale, with great nobility of form, one realizes that American towns far more wealthy and populous than Pompeii do not, except in very rare cases, have anything like this kind of civic equipment, even in makeshift form.

Closer comparisons make our own achievements seem even more destitute and fraudulent: the neighborhood bakeries of Pompeii still made real bread, with flour ground on the premises just before baking—not the kind of devitalized foam-rubber loaf, laden with additives and substitutes, mechanically sliced for built-in staleness, that boasts of never being touched by human hand, though if we were not so enamored of large-scale enterprise and long-distance transportation, we could all have fresh local bread, with flour ground on the spot by small, efficient, electrically driven mills, bread fully the equal of Pompeii's, without the slave labor that probably turned the Pompeiian baker's mill.

Every part of Pompeii was within walking distance, just as if its inhabitants enjoyed each other and wished to profit by each other's company. And the thousands of people who gathered to watch the games, or attend the theater, could leave their seats and reach home on foot before a similar American crowd could begin to get their cars out of a parking lot. In terms of biological vitality, in terms of social life, there is no question as to which kind of community could offer the best facilities and enjoyments for its inhabitants. Now, mind you, Pompeii was not a showpiece or an ideal community; far from it: it was just an ordinary Roman provincial town, so well designed that were it not for Vesuvius it might still be doing business on the same spot, within the same general pattern of life, as is so largely true today in the old Roman colonization towns, like Piacenza and Pavia.

For me the moral I draw from Pompeii is that we Americans must be spending our money on the wrong things if our towns are so poverty-stricken in civic facilities, so confused, and so ugly by contrast, in spite of all their boasted wealth and energy. What Pompeii spent on the vital

contents of life, we spend on wasteful processing, and packaging, and phony publicity. Our trouble then is not merely that we have fallen in love with the machine, and have treated it as a god, to be flattered with prayers and propitiated by human sacrifices—some forty thousand dead by motor accidents every year—a million injured, many of them maimed for life; our trouble is that equally we have ceased to respect ourselves, just as we have ceased to love our neighbors and want to be near them; we have ceased to cherish our own history and to enlarge our own prospects, by promoting character and variety and beauty wherever we find it, whether in landscapes or in people. Because the machine, if left to its own devices, goes in for standardization, mass production, automation, quantitative excesses, we have let our lives be governed by these same mechanical factors; forgetting that all these capacities are beneficial only when they are at the disposal of a purposeful life that is itself more rich, complex, varied, individualized, stimulating, and humanly valuable: something different from a machine's existence.

In their worship of the machine, I suggest many Americans have settled for something less than a full life, something that is hardly even a tenth of a life, or a hundredth of a life. They have confused progress with mechanization, and, lacking any will or purpose of their own, having lost any real religious faith or personal pride, they have let mechanization take command. Even where choice is possible, they prefer an air conditioning unit to the more subtle and satisfactory method of controlling insulation and temperature by proper orientation, and by using trees and gardens more copiously. They respect the steam shovel that levels down a hill more than they value the view that their houses would command if they kept the hill and used its contours. The speculative builder prides himself on the bulldozer that gouges out a stand of trees while he rejects opportunity for a more organic type of plan that would group the houses in a more adroit irregular pattern. These bad habits make it seem as if our countrymen were hostile to all manifestations of life, including their own, except in so far as they enhanced the power and glory of machines.

Some of this attitude is doubtless left over from the pioneer days, when the individual settler had to carve a place for himself barehanded in a sometimes difficult, if not inimical environment. Under these conditions a certain ruthlessness was sometimes unavoidable in self-defense. At all events the pioneer never had to live with the damage he did, as we do now: he could always cancel out his sins, or at least forget them, by moving on to another virgin spot. Even when the pioneer didn't rape Nature, he divorced her a little too easily: he missed the great lesson that both ecology and medicine teach—that man's great mission is not to conquer Nature by main force but to cooperate with her intelligently

but lovingly for his own purposes. Yet for all our careless habits, we Americans once loved the wilderness, for the free mode of life and the self-reliant men and women it bred: whatever is left of adventurous initiative and self-government in this country owes a debt to those days.

Since in our hearts we don't altogether like the kind of mechanically sterilized and spiritually stupefying existence we now live, we have begun to tell ourselves fairy stories about our present state: fooling ourselves into believing we are recovering the old pioneer spirit with barbecue grills in the backyard, just as we call the most compulsive and tension-producing avenues of locomotion our "freeways"—and even boast of the freedom of going at sixty miles an hour for hundreds of miles and never having to stop for a red light, completely forgetting how often we are stalled for ten minutes at a bottleneck, as we creep into the city. So again in attempting to fill up the empty hours of leisure that our mechanical achievements have brought about, we tend to turn every great recreation area into a congested metropolitan slum, pretending to find solace in the beauties of nature, at Yosemite or Lake Tahoe, in an actual environment that strangely resembles a parking lot around a hamburger joint. If the places where we live and work were really fit for human habitation, why should we spend so much of our time getting away from them?

LET US FACE the truth. The real life of a large part of the population, even those who live in agricultural areas, is one long retreat from the vitalities and creativities of a self-sustaining environment and a stimulating and balanced communal life. We have accepted an assembly line existence, in which all human function takes place in an increasingly sterilized and uniform environment, cut off from every reality except that which serves the machine. Whether he wears a white collar or a black collar, the typical American now serves as a baby-sitter to a machine, or is geared into a collective organization that is itself a more formidable and all-embracing machine—a machine that can be run effectively only by bureaucratic personalities, punched and coded to perform a limited set of operations. The factory or the office, with its thousand identical windows, its uniform air-conditioning, its uniform fluorescent lighting, its equally bare and uniform parking lot, has the typical features of this age: faceless anonymity. As far as it is mechanically feasible, this environment has insulated its occupants from every form of reality except the machine process itself: heat and cold, day and night, the earth and the stars, woodland, crop land, vine land, garden land—all forms of organic partnership between the millions of species that add to the vitality and wealth of the earth—are either suppressed entirely from the

mind or homogenized into a uniform mixture which can be fed into the machine.

Look at the life we lead. At the end of a day our countrymen leave this humanly insulated collective environment for an equally cribbed and cabined mechanism on wheels, for a journey that may take anywhere from half an hour to two hours, depending upon how filled the parking lot is and how clogged the freeway. This piece of defective rolling stock, with its lethal, health-vitiating exhaust, provides the fading illusion of freedom along with the reality of constant tension and constraint: its usefulness decreases in direct proportion to its mass use, and in taking over the burden of public and private transportation, both passengers and freight, the motor car has, with the aid of extravagant public subsidies, partly concealed as a gasoline tax, wrecked the balanced transportation system that existed a generation ago, and crippled the functions that the motor car and the freeway, if part of a more complex and flexible network of transportation, would actually—and admirably—serve.

Physiologically the worse for wear, our American finally reaches his dwelling, where he finds a house and a wife in the midst of what is usually called ideal surroundings: a green ghetto, half natural, half plastic, also cut off from human contact, where his wife has for her chief daily companions in her solitude the radio set, the soap opera, the refrigerator, the automatic mixer, the blender, the vacuum cleaner, the automatic washing machine, the dish washer, and if she is lucky the second car. They and their children finally, together or by turns, immobilize themselves before a television screen, where all that has been left out of the actual world, all their unlived life, flickers before their eyes, in images that give a faked illusion of the realities they have turned their backs to, and the impulses that they have been forced to repress. Even here, the machine-conditioned American has no proper life of his own: for what he sees and hears and interprets contains only so much of the real world as the great corporate organizations, military and commercial and political, which control this medium, will permit for the furtherance of their own machine-expanding, power-buttressing, or money-making ends. Freedom of selection is chiefly the freedom of choosing more of the same from another channel.

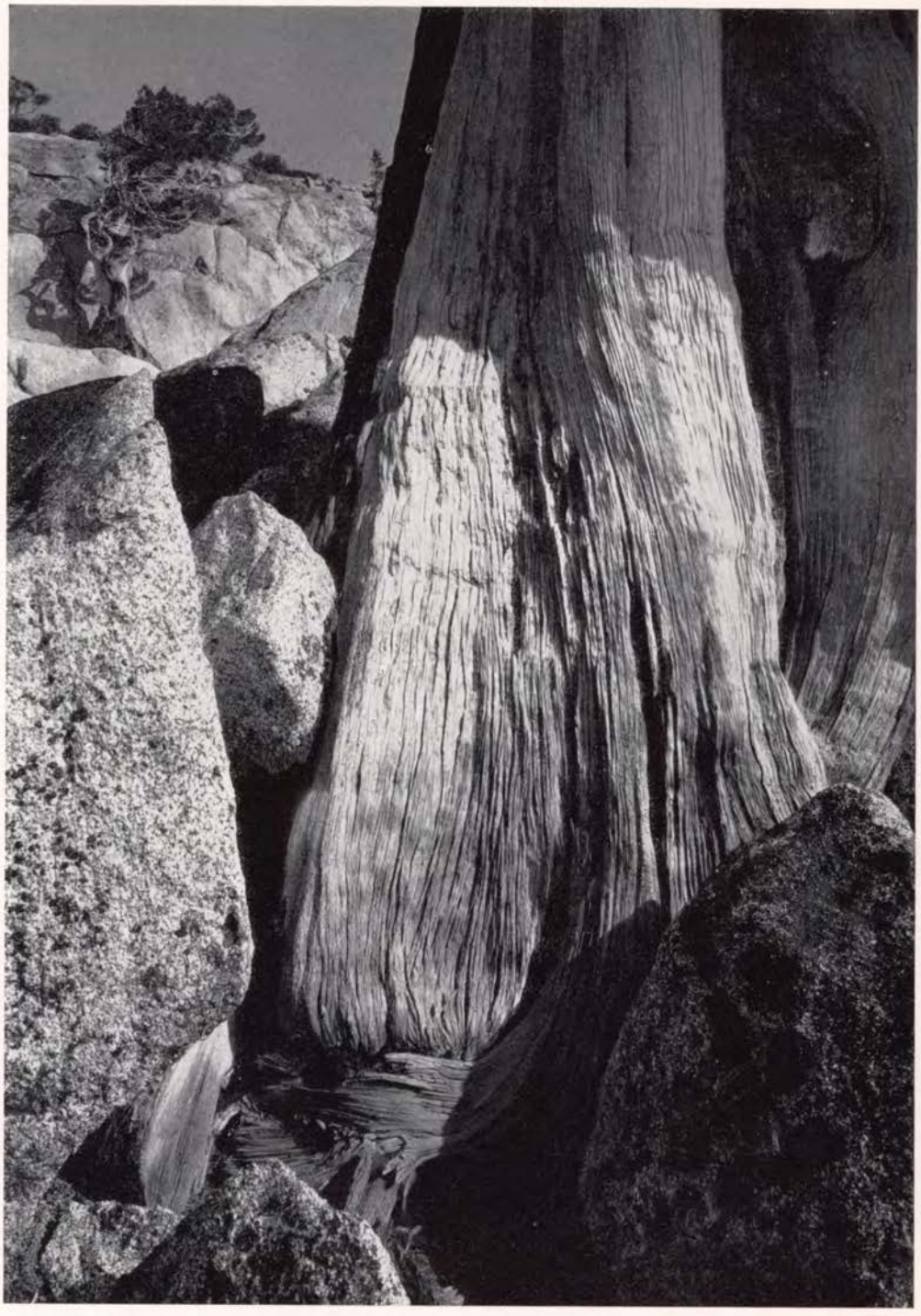
I have of course intentionally, and doubtless grossly, caricatured the life of the representative American today; and I am as well aware as you are of the many happy qualifications and modifications that make much of it bearable, and some of it positively rewarding. There are still real cities in America, like the core of San Francisco, and some of your smaller towns, which, like Palo Alto, with the benefit of Olmsted's great original plan for the campus of Stanford itself, have so far held their own against the bulldozing highway engineers and have even, by the orderly addition

of industrial parks and shopping centers, taken on the more complex and varied and vivid life of a city, without eroding the landscape.

For all this, that caricature is too near reality to let one feel altogether comfortable about the human prospect: especially since it is fast becoming the universal life of mankind, alike in other countries that still call themselves free, and in countries that are under a communist party dictatorship. In the latter countries, indeed, people are resentfully aware of the official pressures and external compulsions, and therefore, if one may judge by recent short stories and motion pictures coming out of Soviet Russia, they have reacted against their oppressive political regimentation by cultivating a warmer sense of the eternal human decencies and moralities, as between family and family, person and person. Few of our own Hollywood or Radio City productions show anything like the same human tenderness as the recent Russian *Ballad of a Soldier*.

At all events, the ultimate pattern of gracious American living, if we continue our rigid and unqualified commitment to the machine, is already in sight. Six hours for automatic production and forced consumption in order to maintain the expanding economy: three hours for transportation as we get farther and farther away from the place where we don't want to work, to the place where we no longer have much opportunity to sleep: six hours for mechanized togetherness, sometimes called family life and recreation: and finally, at least nine hours of sleep, partly to forget that we have not been living, partly to provide for the increasing sale of sleeping pills, hypnotics, and tranquillizers, those indispensable adjuncts of the kind of life we offer to our highly mechanized and urbanized population. The only element I have left out of the day's schedule is mating: but plainly, with artificial insemination from a bank of frozen sperm cells, in accordance with Dr. Herman Muller's formula for human improvement, this injection can be combined with an influenza shot or an X-ray checkup. So much for the nightmare of our brave new world: we are lucky if what we see when we move about and what we do in our day's work turns out to be sufficiently different to reassure us that we are awake.

ISN'T IT ABOUT TIME that we took a hard second look at this life of ours and faced the fact that if we go on acting this way, the human prospect will be increasingly dismal? Are we creating the kind of life that anyone in his senses would bargain for, still less regard as the sufficient consummation and justification of civilization? Sinclair Lewis took such a look at Zenith and Main Street a generation or more ago; but what he found there was relatively healthy, sweet, decent, and sane compared with the kind of life that has been thrust upon us by the automatic proliferation of scientific invention and mechanical organization during



Junipers on Seavey Pass *by Philip Hyde*

No campfire should consume these antiquities of nature
— only the slow fires of decay

Timberline Sculpture

Whitebark Pines,
Sawtooth Country.
By Philip Hyde

By Cedric Wright

prevailed over egoistic, nationalistic presumptuousness and nuclear delusions of absolute power. If the world overcomes the irrational forces that are now undermining human culture everywhere, forces long embodied in the dangerously obsolete institution of war, it will be because people everywhere realize that all the goods of life are the joint product of the human race as a whole, and that we are bound to all our neighbors by all the facts of history and by the hopes of the future, as they are bound to us.

The kind of cooperation that still exists between all nations in the world of science and scholarship—at least that part of science and scholarship that is not under the control of totalitarian military agencies operating in secret—sets a pattern for the future relations of regions and countries: so much so that the core institution in every vital city today is no longer the palace or the temple or the market, but the university, and it is to the honor of the university that such an open discussion as is going on here today is possible in contrast to the death-oriented doctrines and isolationist nonsense as a prescription for "national survival."

In discussing the role of planning we all too easily get lost, however, in details of political organization, economic support, population movements, transportation facilities; metropolitan or regional government; and we neglect the factor that is central to all of these things: the dimensions of the human personality. The answer to the problems of human organization and human control will not come from computers; the answers will come from men. And it will not come from the sort of men whom we have indoctrinated with the myth of the machine—the disoriented experts and specialists whose uncoordinated and lopsided efforts, uncorrected by the wisdom of their peers, and uncorrected by historic experience, have produced the over-mechanized, standardized, homogenized, bureaucratized life that now surrounds us increasingly on every side.

Our first job in controlling the forces that are now working such destruction and havoc in every regional community is to cultivate men who are capable of exercising this control: proud, confident, self-respecting, cooperative, men. Not men for sale, men tailored and trimmed to fit the machine, but men capable of using all their powers, taking back to themselves the functions they too easily resigned to the machine, and projecting human goals, in the full trajectory of life, goals which they often disregarded in their eagerness to exploit some immediate opportunity. If our mode of life or our education had produced such men in sufficient numbers, we should not now be living in an increasingly denuded and life-hostile environment; and if we are ever to give to this region, or any other region, the life-sustaining richness and variety that are possible,

even in areas where natural conditions are unduly uniform or climatically difficult, we will have to begin all over again at the very beginning, with the infant in its crib. That is where education starts.

LET US CONSIDER the most limited environment. If we look at it carefully, we shall perhaps have a key to what must be done in every other area. Consider the newborn baby of the last generation, the generation of my own and immediately after my own. Our mechanized civilization, in the interest of a speedy delivery, at the convenience, even at the control of the physician, often endangered mother and child with impatient interference in the natural process, and too often compounded this mistake by anesthetizing the mother completely. All too soon, as a result of scientific pride over inventing a formula for feeding independent of the natural source of milk, the child was parted from its mother and deprived not only of mother's milk, but of the experience of a warm, loving, commensal relationship with her, the kind we must have also with Mother Earth. In other words, both mother and child were cut off from a basic physical and spiritual experience, an experience which is a vital model for all remoter forms of cooperation and association. When behaviorist doctrines were at their height the next point in the child's development consisted in a systematic effort to make clockwork habits take the place of organic responses timed to the organism's own needs, especially in bowel training. Thus, as one of our most able child psychologists, Eric Erikson, has pointed out, before an American child was three—this held with his patients at least up to 1950—he had been conditioned to accept an external mechanical order as absolute, and to believe that there was nothing he could do to change it, particularly if he wanted to win the approval of those who stood in authority over him. Such a training made bad citizens for a democracy; but it fitted admirably, with its mechanical punctuality and regularity, with its human docility and conformity, into larger bureaucratic and totalitarian systems.

While many of the present generation of young people are, happily, beginning to reject every part of this process, beginning with the young mothers and enlightened physicians who accept childbirth as a normal organic process—it can take place in a home—though nowadays it too often takes place in a taxicab or a car on the way to a distant hospital!—not as a surgical ordeal like a major operation. In justified reaction against the mechanical regimen that prevailed a generation ago, some of the young have even reacted to the opposite extreme, quite naturally, an extreme of heedless permissiveness and irresponsibility, thus abdicating the parental role and turning the infant itself into a tyrannous monster, subject to all the psychological disorders that befall every creature that

has delusions of absolute power, devoid of purpose, and every attribute of freedom except the ability to select a path and follow it. If you look closely at these two patterns of child training—one too rigorous, too machine-dominated, too over-strained, the other too feckless and reckless to pay attention even to the natural rhythms of the body and natural hierarchies of power and responsibility—you will perhaps have a clue to the characteristic weaknesses of planning today.

On one hand we have the compulsiveness and arbitrariness of our highway planning, our urban renewal projects, our centralized recreational facilities, in which the demands of the administrator, the investor, the engineer ruthlessly override the human needs to be served and deform the final product, making it really unfit for human use. But against this you have the unlimited permissiveness of suburban sprawl; and along with both tendencies an attitude of hopeless passivity, based on the curious assumption that although all these mischievous and maladroit activities are the result of human actions and human plans, they are beyond human control, once they are in existence, and are doomed to get worse and worse. This is nonsense. I would challenge that assumption, even were it necessary to wait for a whole generation of new young people to emerge—a generation who have come into the world without having to submit to the over-mechanized, over-sterilized, deliberately anti-organic regimen that has no faith in either life or love.

We shall never succeed in dealing effectively with the complex problems of large units and differentiated groups, unless at the same time we rebuild and revitalize the small unit. We must begin at the beginning; it is here that all life, even the life of big communities and organizations starts. The home and the neighborhood are an integral part of the region, and some of the most pressing problems in adequate land use cannot be solved, with the big population that is flooding into California, unless we handle the whole pattern of settlement, including the layout of the individual houses and apartment units. The child has a right to live in an orderly, intelligibly patterned world, scaled to his size and his capacity for movement, and designed for encouraging his activities, and for making him feel at home with his fellows and neighbors, even when he leaves his domestic nest. If we are to recapture the initiative from our machine-centered civilization, we must establish a life-centered environment from the moment of birth. Who can pretend that a fifteen-story, high-rise apartment in an urban renewal project is such a family environment? But neither—let us not fool ourselves—is an insulated single family house, entirely cut off from its neighbors, or lined up, side by side, for the convenience of the builder and the deed of sale, on a long uniform street, one uniformed unit after another. Neither of these environments serves as a surrogate for the mother or as a proper sample of a bigger community.

Every housing development should have the virtues of both a village and a kindergarten; the houses themselves should form a protective enclosure, so that the child can move about freely, among other children, and still be under the eye of his mother, or rather, a whole group of mothers, safe from moving traffic, not having to share his play space with a motor car or be toted a mile or two by car to find it. Real human communities must preserve social as well as visual variety; hence the fact that we no longer attempt to house a three-generation family within a single dwelling makes it all the more imperative to restore this combination to the neighborhood. Age segregation is just as bad as income segregation or racial segregation: we need mixed age groups to sustain life even at the simplest levels. A child needs grandparents, or substitute grandparents, as well as parents; he needs to live in a normal human community with the companionship of other children, as well as those of his own family. None of these things happen automatically nowadays on any scale: automatic processes tend to produce isolation and segregation, or a congestion which is just as bad as the mass production of single unrelated units, not the complex pattern produced by integrating in appropriate structures and forms a whole variety of human needs and functions. Nor can the benefits of such an integrated social design be produced by private individuals, no matter how great their financial means. Public authorities must take the lead in experimenting with new urban patterns, new layouts: they must seek to establish a tradition that the individual developers—perhaps with public assistance—can themselves carry out, instead of as now following the line of least resistance, which always is a mechanical repeating pattern.

I have taken this simple illustration to show how many-sided the organic planning process is, even at the smallest scale, when you understand and attempt to do justice to human needs. What I have said of housing alone applies in equal degree to the neighborhood, which must be built again into an active political unit, if our democracy is to become active and invigorated once more, as it was two centuries ago in the New England Village, which was a superior political environment; and the same principles apply again to the city and the interrelationship of cities in a unified urban and regional network or grid. But I have used this illustration of how to give order, variety, and protection to the growing child for still another reason; and that is because it offers a model of the chain of relations that bind the small unit to seemingly remote parts of the environment and to problems which seemingly have nothing to do with it.

ALREADY you have let the pressure of population and of private real estate development destroy some of your best agricultural land. Even

here in the broad Central Valley, you are threatened with this, and no less than in the Santa Clara Valley and the San Bernardino Valley, valleys whose orchards and vineyards not merely gave character to their little towns, but had positive recreational value for the bigger cities like Pasadena, Los Angeles, and San Francisco. That soil was precious; that combination of agricultural production and re-creative beauty were essential to the vitality of the whole urban community; and by packing these valleys with a disorganized overload of people and vehicles you have even been lowering the health levels with smog and carbon monoxide, as recent official reports show. This random scattering of population has spoiled both the urban and the rural potentialities of these valleys: whereas if you had thought of housing in direct communal terms, to begin with, the care of the child and provision for the child's healthy growth in his family and neighborhood, you might have built two- or three-story houses instead of the low sprawling ones of a single story, a type that is now sprawling all over the country, and you might have doubled, and in many cases quadrupled the number of people per acre, with an enormous improvement in their social and domestic environment.

By proper planning alone, you could have preserved from fifty to seventy-five per cent of the land now misused and wasted. Indeed by means of proper planning you may still save much precious land, which is now about to be misused, from such a fate. At a residential density of from fifteen to thirty families per acre—fifteen to twenty families is the usual density in the spacious, perhaps even too spacious English New Towns—you could have provided better gardens, better playgrounds, safe green walkways to school, more accessible schools for the children, and a far better life for the parents as well, a life designed deliberately to favor the neighborly interchange of services that must become, as once it was in pioneer days, our communal substitute for menial helpers that hardly anyone can now afford to hire. Not the least advantage of such organic communal and neighborhood designs is that they would release the individual housewife and mother from the slavery of her present twenty-four hour tour of duty.

This illustration has many ramifications; but its chief use today is to indicate that respect for human conditions and for development and growth will help improve every part of the regional landscape, and will make possible a complex interlacing of functions, in a pattern of mutual aid, not mechanical regularity, that will be superior to any one-sided solutions, based on single factor analysis and compartmental thinking devoted mainly to the exploitation and profitable use of the machine.

But before the kind of thought and design I have indicated becomes popular, we shall have to overthrow the myth of the machine and replace

it with a new myth of life, a myth based upon a richer understanding of all organic processes, a sharper insight into man's positive "role in changing the face of the earth"—I deliberately use the words of our great geographer, Carl Sauer—and above all a deeply religious faith in man's own capacity to transform and perfect his own self and his own institutions in cooperative relation with all the forces of nature, and above all, with his fellow men. To put all our hope in the improvement of machines is the characteristic inversion and perversion of values of the present age; and that is the reason that our machines threaten us with extinction, since they are now in the hands of deplorably unimproved men. This is no moment to fight a rear-guard action, a mere delaying action, against the forces that are planing down the landscape and denuding and dehumanizing the capacities of men. The time has come for bold counterattack—and we may not have long to wait.

During the last three years I, like many of my colleagues, have noted a new generation coming into the colleges: a generation trained perhaps more lovingly than their rigid and passive predecessors. They are no longer cagey conformists, no longer bent on dodging all the adventurous possibilities of life by an overemphasis on security, measured in income, or in status, measured only by the things money will buy. These young people, sometimes at great sacrifice, put babies ahead of careers; and they find in themselves and their family life, resources that are not found in machines and are often deplorably lacking in the bigger community itself, lacking even in the big cities. Though they have grown up in an age of violence and totalitarian conformity, they now challenge its brutalities and reject its compulsions; and their respect for themselves is greater than their respect for anything the machine, with or without their help, has created. They are still in all probability a minority; but the seed of life has ripened in them: if their elders do not betray them by surrendering even more abjectly than they have already to the forces of disintegration and extermination, this generation will assume responsibility that too many of us still shrink from. They will overcome our passivities, overthrow our regimentations, and place the guardians of life once more in command. This is still an uncertain promise: but at least—and at last—it opens up a human prospect.

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This article was first presented as the closing address before an Institute on Planning for the North Central Valley on January 12, 1962 at the University of California, Davis. The Central Valley, Professor Mumford noted, "is bound by a thousand ties, not only to the rest of this state and the country, but to the rest of the planet."

Must Logging Destroy Streams

By Alex Calhoun

California must count the healthy stream among her most valuable resources, for it yields clean water for irrigation, industry, and domestic use. It may also produce trout and salmon, and contribute less tangible recreational values of the highest order. Yet we continue to damage watersheds through poor land practices, and the streams suffer accordingly. Overgrazing and careless agriculture are serious offenders. So is road construction, and dam construction is a growing problem. But nothing short of a mountain freeway matches careless logging for extreme, localized damage to watersheds and streams.

Logging damages streams in two principal ways. One is physical destruction of the stream channel by heavy equipment working in the bed and along the banks and by trees falling into the channel. The other is stream sedimentation caused by heavy erosion from carelessly logged watersheds.

In 1951 public indignation over cluttered north coast streams led to a State law prohibiting jams which block the passage of fish.[1] In 1957 this law was made statewide, so now we can prevent additional jams. However, this stream clearance law created a new problem almost as bad as the one it solved.

Many loggers still fill streams with logs and debris during the summer. Then, in the fall, they run their bulldozer down the channel to clear a passage for fish. The results meet the technical requirements of the law. However, this is very bad indeed for the stream, compounding the damage already done by further tearing up the channel and any remaining streamside vegetation.

Unlike a log jam, which can be corrected by removing the logs, this physical destruction of the stream by heavy equipment can be corrected only by time. And the destruction is not limited to the immediate area of damage, because soil erosion from the damaged section usually smothers considerable distances of the stream below.

This damage is occurring in widely scattered areas in the northern half of the state on privately-owned forests. Surveys still in progress place the number of streams damaged during 1962 at more than thirty, distributed

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When the Long Meadow Creek area in the Kings River Drainage of California's Sierra National Forest was logged in 1961, a buffer strip was left along the stream. The angler caught two trout while this June 1962 photo was being taken by the author.

Logging need not destroy watershed, . . . but too often does

Beal Creek, a small trout stream in Shasta County, California, was moved out of its original streambed into this new channel by recent logging operations on private land. Photo by Charles Seeley

Logging in 1962 on private land along Nelson Creek in Shasta County created this scene. Photo by Charles Seeley

Careless loggers let trees fall into channels and let heavy equipment work in stream beds and along banks, destroying stream channels and streamside vegetation and silting water for miles downstream.

Buckeye Creek in Sonoma County, once an excellent steelhead river, was left this way following 1962 logging. Note the logging road running through the far side of the river and the extreme siltation. Photo by Curtis Kastner

This road, built along the banks of a tributary of Pepperwood Creek in Sonoma County during a logging effort some years earlier, was eroding badly when this photograph was taken in 1962 by Charles Seeley.

Honor camp inmates clearing a redwood log jam from a Noyo River tributary, Mendocino County. Photo by William Dillinger

Redwood and Douglas fir were logged selectively on this private land in Mendocino County. A buffer strip was left along McGarvey Creek, one of the smaller feeder streams in a steelhead nursery area. Photo by Charles Seeley

Loggers who protect streams keep bulldozers out of channels and away from banks; leave buffer strips of vegetation; keep skid trails, landings, and logging roads away from streams; and plan roads and skid trails to minimize erosion. Some companies logging private lands voluntarily protect streams and watersheds, but others do not.

Fish and game laws and the present Forest Practice Act cannot prevent the type of watershed damage pictured on these pages. The act needs amendment to make it readily enforceable and to add the protection of fish and streams to its stated goals.

among the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Shasta, Glenn, and Tuolumne.

El Dorado and Sierra counties had problems in 1960 and 1961, but not in 1962. Fish and Game wardens there have persuaded some loggers to follow good practices, and other operations are away from streams.

Direct damage by heavy equipment is only half the story. Careless land practices away from the stream can also damage it through excessive erosion leading to stream sedimentation, especially when the soil is disturbed enough to erode into the stream at low flows. Then it stays there.

Comparison of a clean stream with a dirty one illustrates why trout production drops sharply following silt impaction. A clean stream has a loose gravel bottom, especially in the riffles. The spaces between the individual rocks are filled with clean water, containing ample oxygen. These spaces are ideal for the aquatic insects which stream trout eat in such large measure. They also provide ideal conditions for developing trout eggs and for the newly hatched fish, which stay in the gravel for some time. Finally, they provide essential shelter where small trout can hide from predators.

A silted stream is a sad contrast, with all the spaces among the rocks filled with silt and sand. The aquatic insects so important for trout food cannot survive. Trout eggs deposited in the muddy gravel smother before they hatch. The hiding places for small trout are gone too.

But silted streams are just a symptom of the more basic problem of soil loss. The quantities of silt bleeding off some of the drainages with heavily logged private forests are surprisingly large; from some north coast drainages we find the following losses each year, in tons of sediment per square mile of drainage: South Fork Eel, 8,950; Van Duzan, 5,300; Eel River at Scotia, 4,800; Mad River, 3,120. The loss from the South Fork Eel drainage amounts to roughly six pounds of soil per square yard of land per year. Smith River, less heavily logged and protected by extensive national forests, still runs fairly clear with a loss of only 329 tons per square mile.[2]

While logging is not the sole cause of these losses, it is a prime contributor. Poorly designed logging roads play a major role.

This current damage is an unfortunate sequel to past logging in California, with its sad heritage of north coast streams jammed with redwood debris. These coastal streams are valuable spawning and nursery areas for silver salmon and steelhead. Jams block the adults from upstream spawning grounds and they trap sediment, smothering productive stream bottoms under thick layers of silt.

Removing these old jams is an immense job. The California Wildlife Conservation Board proposes to spend $500,000 for the work over a 10-

year period. Since 1960, it has committed $164,000 to four projects which will clear about 245 miles of streams. Earlier the Department of Fish and Game had cleared some 66 miles of the Noyo and San Lorenzo drainages, at a cost of $30,000. These projects have included streams all the way from Santa Cruz County to Del Norte County. Honor-camp inmates do the work. In addition, the logging industry has helped in some areas, even when it was not legally required to do so, and the California Division of Forestry has cleaned out extensive jams in the Jackson State Forest. And all of this is just a beginning.

Good logging practices on national forests and on some private forests demonstrate conclusively that watersheds can be logged without destroying streams. The key factor seems to be for a logger to want to do so.

The logger who protects streams keeps bulldozers out of the channels and away from the banks. He leaves buffer strips of streamside vegetation along the stream banks. Although he may lift out some high value trees, he does this without seriously disturbing the stream banks. He keeps skid trails, landings, and logging roads away from the stream, except for necessary crossings. He plans roads and skid trails to minimize erosion and then when he has finished logging, he builds water breaks on the roads to prevent undue erosion the next winter.

Stream protection is now voluntary where logging is on private land. California's Fish and Game laws do not prohibit the damage except in a limited way by prohibiting obstructions and pollution. The Forest Practice Act[3] deals only with forestry *per se*. It ignores streams, watersheds, and fish, all intimately related to logging. This frustrates those responsible for the fish because a stream and its fish cannot be divorced from land use on the adjacent watershed.

Although some of the more progressive logging companies voluntarily follow good practices which protect streams and watersheds, many others do not. Clearly, California's Forest Practice Act needs amending to protect these other resources. The amended act should recognize the logger's obligation to protect streams and watersheds in a reasonable manner and the state's interest in having him do so. It should also make it necessary that the State Board of Forestry and the District Forest Practice Committees recognize these values as state resources and establish rules that will protect them.

This approach seems best because stream protection and erosion control are too complex to legislate in specific terms. Terrain, climate, native vegetation, soil, and bedrock characteristics all affect watersheds, erosion, and streams. These conditions vary widely, and good local practices vary correspondingly.

In an earlier article,[4] Phillip Berry described the difficulty of enforcing the existing Forest Practice Rules. He concluded, "The Act must provide more control if it is ever to be more than a pleasant statement of policy." We hope for legislation in 1963 which will add the protection of fish and streams to the stated goals of the Forest Practice Act. The Act must, of course, be amended to make it readily enforceable before amendments to protect streams will accomplish very much. The Act appears to present insurmountable problems for the Division of Forestry in its present form.

REFERENCES

[1] California Fish and Game Code, 1961, Section 5948.

[2] Data provided by Pacific Southwest Forest and Range Experiment Station, Berkeley.

[3] California Public Resources Code, 1961. Division 4, Chapter 10.

[4] Berry, Phillip, "The Need to Revise California's Forest Practice Act," *Sierra Club Bulletin*, 46:3 (1961), pp. 44–51.

Who added the most famous
Big Trees to Sequoia National Park?
A fascinating question in national park history

Giant Forest's Reservation: The Legend and the Mystery

By Oscar Berland

That the giant forest is part of Sequoia National Park seems hardly a matter for discussion; it is its heart. Yet Sequoia Park was born without it. As established by Act of Congress on September 25, 1890, the park consisted of little more than the two townships that today form its rarely visited southern toe (see map on page 73). Less than a week later, on the last day of the same session of Congress, the now famous forest and nearly five townships of surrounding land were added.

This somewhat erratic procedure has never been explained. It has rarely been questioned. The few who have considered the peculiar duality of Sequoia Park's founding dates have generally assumed that the reservation of the Giant Forest was part of an original plan for the park, but that through some oversight in the wording of the legislation, a second bill was required to achieve it. Because of the apparent reasonableness of this assumption, a fascinating problem in park history has been long overlooked.

Not only was the reservation of the Giant Forest and surrounding land *not* part of the original plan, but George W. Stewart (editor of a local weekly and later called "father of the park"), Frank J. Walker, and Tipton Lindsey (who together actually authored the first park bill) had each pointedly opposed it. Their reason was rather unusual. "This vast tract," said Stewart, who was not unaware of its beauty, "is already claimed by a colony of Socialists. . . ."[1]

Many national parks have in their annals a tribe of indigenous Indians, a first rancher, and a band of public-spirited citizens. Sequoia Park had one thing more: that socialist colony.

The General Sherman Tree, at the time Stewart wrote, was called the Karl Marx Tree. An eighteen-mile road, built by the colony, reached to the belt of pine and fir that stands across from Giant Forest, on the western ridge of Marble Canyon. In another canyon, along the banks of the North Fork of the Kaweah, three hundred colonists lived in tents, wait-

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A graduate of the college of the City of New York, **Oscar Berland** of San Francisco is presently working on a history of the Kaweah Co-operative Colony.

Members of the Kaweah Colony working on the road Andrew Caldwell termed in 1890 "one of the best built mountain roads I ever traveled over."

Sequoia and Kaweah Colony

Daniel K. Zumwalt, attorney and land agent of the Southern Pacific Railroad at the time Sequoia National Park was established. Oscar Berland makes the provocative suggestion that Zumwalt and the Southern Pacific may have played a major role in adding Giant Forest to the park. Photos courtesy Bancroft Library

Kaweah Colony's "Ajax" in the pines, the self-propelling steam engine used to power the colonists' lumber mill. Courtesy National Archives

"Advance is beautiful with white wings," wrote Anna F. Haskell, wife of the founder of the Kaweah Co-operative Colony, on her first visit to Camp Advance. Courtesy Bancroft Library

ing for final title to the nearby forests so that serious lumbering and better days could begin.

Their claims dated back five years, to October 1885, when some fifty-five people, about half of them from San Francisco, had applied for adjacent quarter sections (160-acre tracts) of timberland in the four townships that include and surround the Giant Forest. An unusual group—anarchists, nihilists, communists, socialists, single-taxers, greenbackers, and some "plain farmers" who simply could tell a good thing when they saw it—some sought the land to found a colony, some to raise funds for "the socialist propaganda," some just to raise funds. But they encountered difficulties from the start; with their difficulties the story of Sequoia Park properly begins.

Their first problem was the new Commissioner of the General Land Office in Washington, William Andrew Jackson Sparks. An intransigent Jeffersonian, as radical in his way as many of the applicants, Sparks believed that large land and timber baronies were essentially "un-American."[2] He had seen the government's various land programs perverted by fraud and speculation, becoming in effect the very instruments of monopolization, and from the vantage point of his new post he was determined to make drastic correction.

Sparks no sooner learned that a large block of timber filings had been entered at the Land Office in Tulare County, California, than—suspecting a company with dummy entrymen[3] at work—he in characteristic manner withdrew from market the four townships over which the claims extended, and fourteen others for good measure. As his reasons he gave "supposed irregularities in the surveys, and alleged fraudulent entries," and promised "an examination in the field . . . as soon as possible."[4]

The applicants—who learned of this when they returned after sixty days, as required by the Timberland Act of 1878, to tender their proofs and the purchase price, $410 per tract—were not particularly dismayed. This would give them more time to raise the necessary cash; meanwhile their filings would keep others out. They knew that the surveys were good; the suspicion that they were dummies, they felt, would be dispelled by their effort to develop the land.

In August of the following year, 1886, most of the timber applicants formed themselves into the Kaweah Co-operative Colony; a few months later work on the road began. Others joined. In time a tent city, Advance, took form, with school, library, printing press, newspaper, orchestra, and no small amount of friction.

The timberland applications remained in a cubbyhole. This was Sparks' most effective weapon in his single-handed battle against land monopolization. Individual settlers, he reasoned, who intended to retain the land

they received under the various land laws, did not need patents; only speculators and their dummies did.[5]

In 1887 difficulties with the land-hungry railroads forced Sparks' resignation. When a new administration came into office in 1889, the new Secretary of the Interior, John Noble, sternly chastised Sparks for his suspiciousness and promised to give again "a liberal interpretation to the land laws."[6] So it happened that just as the colony's road was nearing completion and lack of final title was becoming a serious problem, federal land agents arrived to make the long-deferred examination. One came in the fall of 1889, another in the summer of 1890. Both reports were generally favorable. The colonists "seem to be entitled to their land under existing laws,"[7] said Stewart, expressing the opinion then current in the community. But one thing marred their prospects.

Park Agitation in Tulare County

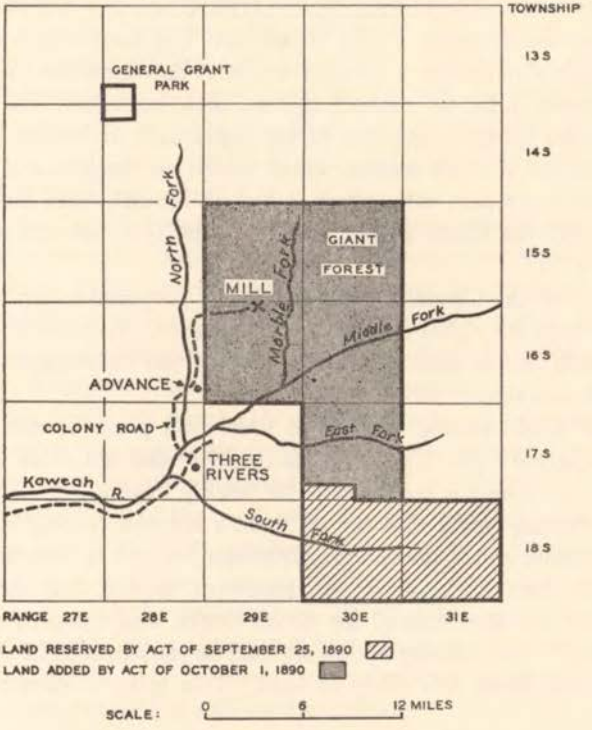
There had been proposals for park reservation in Tulare County since at least 1880, when the four-section tract surrounding the Grant Grove—the only local Sequoia grove then accessible by wagon road—was singled out and protected by local Land Office action. But by 1890 the growing conservation movement was concerned with more than the preservation of a favorite curiosity. The county, changing from a grazing to an orchard economy, had become involved in the problem of watersheds.

Two of the eighteen townships withdrawn by Sparks in 1885 had by 1890 been returned to the market. But when a third was reopened to entry in May 1890 and taken up with suspicious speed, it triggered the campaign that led directly to the establishment of Sequoia National Park. First a flood of protest caused the resuspension of what was left of that township (T.17S., R.30E., M.D.B. & M.). Then, urged by editorials in Stewart's *Visalia Delta*, Frank Walker and others petitioned the Secretary of the Interior for the permanent reservation of the township just south of it, which contained the Garfield Grove. A few days later, on July 28, a bill to that effect was submitted to Congress by General Vandever, Representative for that district. At the request of another Tularian, Tipton Lindsey, the bill was amended to include a township to the east; then, at Walker's behest, four sections of land to the north were added.[8]

In this form H.R. 11570 was passed by the House of Representatives on August 23, 1890, less than a month after its introduction. The land claimed by the Kaweah colonists was not included. "It is generally thought that they will substantiate their claims and acquire the land," Frank Walker explained to the California Academy of Sciences a few days later, adding, "and public sentiment seems to favor it."[9]

This was indeed the case, for the colonists were surprisingly well liked. Their radicalism having mellowed over the years, their views regarding "the uplifting of mankind" were by 1890 not too unlike those held by many of their equally heterodox neighbors. Then too, the money sent in by nonresident Kaweahans to support those working on the road had meant good business for local merchants and farmers; the colony's success promised even more. But it was its five years' labor on the road

Sequoia National Park Boundaries, 1890



that gave Kaweah's claims final validity in local opinion. The staunchest conservationists acceded to the popular view, especially as the colonists had long insisted that the Big Trees, which they had named for their various heroes, would not be felled, and that the Giant Forest, itself only a small portion of their anticipated domain, would be turned into a summer resort where tourists attracted by the Sequoia might *en passant* observe the enlightened operation of their new society.[10]

On September 8, H.R. 11570 was passed by the Senate without further amendment. The *Kaweah Commonwealth* uttered an audible sigh of

relief. "This news," it announced, "assures the retention of our rights to the Giant Forest, as one National Park is all that is likely to be created for some time to come in this vicinity."[11] On the 25th the bill was signed by President Harrison; on the 26th Secretary of the Interior Noble christened the new reservation "Sequoia National Park."

The Second Act

Four days later, on the last working day of the first session of the 51st Congress, the House Committee on Public Lands presented that body with a new piece of legislation, H.R. 12187. It was a substitute for a bill concerning the Yosemite Valley region that had been introduced earlier by the same Congressman (Vandever) who had sponsored the Sequoia Park measure. Like the original, the two main sections of the substitute bill provided for the protection of the watersheds of Yosemite. But the substitute had a third section which added to Sequoia Park an area more than twice that with which it had so recently been born, including not only the Giant Forest but all of the four townships that surrounded it.

Assured by the Committee that "it is not proposed in any manner to interfere with the rights of settlers or claimants," both houses approved the bill with neither debate nor dissent,[12] and the following day, October 1, 1890, it was signed into law.

Several weeks passed before the California press became aware of this unexpected turn. The Kaweah colonists did not learn of it until October 21.[13] The first comment in the weekly *Visalia Delta* appeared on the 23d. Noting coldly that the act "was a surprise to people here," the conservationist editor limited his expressions of joy to two items in the new legislation: a clause in the appended section that permanently sequestered the land around the Grant Grove, and the provision which guaranteed " 'that nothing in this act shall be construed as in any way . . . affecting any *bona fide* entry of land.' This is as it should be," said Stewart.

Stewart's Search

Twenty-six years later, in 1916, a record 10,000 visitors traveled over the Colony Mill Road, which a troop of cavalry had by then extended on across Marble Canyon to the Giant Forest. The colony itself was long since dead. It had crumbled in dissension in 1891, shortly after the Secretary of the Interior had ruled that its land claims were not truly *bona fide* entries. There had been bitterness, ugliness, and even two suicides.[14] But by 1916 all of that was almost forgotten. A beautiful park, belonging to the entire nation, stood as a strangely appropriate conclusion to

Kaweah's unhappy story, with many ex-colonists among its most dedicated rangers and protectors.

That was the year George Stewart began to investigate the manner in which Sequoia Park had been enlarged. More than a quarter of a century had passed; it was time for histories to be written. Park historians Enos Mills and Ansel Hall were applying to him for information concerning the events of 1890. As Stewart told them what he knew—which the historians transcribed with some embellishment—he himself became aware of how much of the story he did not know.[15]

There was another reason, too, for his concern. Stewart had become involved in the effort to extend the park to the east, and proposed that some of the untimbered and less scenic lands included by the Act of October 1 be traded for privately held land within the areas he wished the park to acquire. As it would strengthen his argument if he could enlist the support of whomever had been responsible for that legislation, he felt he should learn who it was.[16]

Stewart's first suspect was Gustavus Eisen, the botanist who in 1890 sparked the conservation activities of the California Academy of Sciences. The two began a five-year correspondence that is charming with its detailed repetitions of recollections that never quite match and dates that will not fit. But despite Stewart's efforts to force the credit upon the old botanist, it became clear that it was not Eisen.

Stewart continued his search. He collected copies of relevant government documents, but apparently they too offered no answer. Late in 1930 he addressed the question to Robert Underwood Johnson.

Stewart was now 73; the park was 40. The problem of the Giant Forest's reservation was still unsolved. For years it had been assumed that Stewart, now acclaimed the park's "father," had been responsible for the protection of the park's heart. By this time even Stewart had come to believe that the original bill had somehow reserved the forest and that the second had merely added untimbered sections.[17] But the mystery of that second bill still troubled him.

"I did not learn at the time why or at whose suggestion the Park was enlarged," he wrote Johnson, who in 1890, as associate editor of the influential *Century Magazine*, had publicized the need for better protection of Yosemite Valley. "I inquired later of John Muir and others to whom he referred me, but no one of whom inquiry was made could throw any light on the matter."[18]

Neither did Johnson's reply provide a definite answer. A few months later George W. Stewart, who had protected the park for forty-one years, took with him to his grave the disturbing puzzle of its establishment.

A Possible Solution

The reservation of the Giant Forest was indeed shrouded in mystery. The legislation that accomplished it, unlike the measure that first established the park, was never discussed publicly, and hence its proponents could not be identified. The western press seemed unaware of its passage. Reference to the measure cannot be found even in the Minute Book of the House Committee on Public Lands, which ostensibly authored the bill. Nonetheless some suggestions can be made.

The problem is somewhat simplified by one consideration. The Giant Forest, because of its inaccessibility, was then virtually unknown outside its own locality. This effectively limits the area of search.[19] And while it is true that the local conservationists spoke against the forest's reservation, the very fact that they did so, as well as the Kaweah Colony's obvious nervousness concerning the matter, would seem to indicate there were some in the area who favored it. Unfortunately only one such proposal is recorded. It was made by Andrew Caldwell, the second of the two Land Office agents sent to investigate the colony's claims.

Caldwell was a temporary employee, hired especially for that one task. He arrived on the scene in June 1890 and completed his mission in July. Impressed by the colony's road, which he described as "one of the best built mountain road[s] I ever traveled over," and "a monument to their industry," his report of July 16, 1890, concluded, "I can see no good reason why said suspended Townships should not be reopened for settlement."[20]

With that his employment was to have ended. But at the urging of Congressman Vandever another task was found for him, a survey of Big Trees.[21] At this point Caldwell's attitude toward the colony began to change. In August he filed a formal notice of trespass against its trustees for having ordered lumbering begun at a small, portable sawmill that had been set up at the end of its road.

On September 25 Caldwell returned to Visalia, his extensive survey completed and his opinion fully reversed regarding the four townships across which the colony's claims extended. "These townships," he now wrote, "with the 'Giant Forest' in the center, would make the grandest park in the world, and it would be an irreparable loss to posterity to have the only large and perfect body of *Sequoias giganteas* fall into private hands to be soon cut down and obliterated forever, simply to gratify and possibly enrich the leaders of a body of misguided enthusiasts."[22] *This is the only proposal for the reservation of the Giant Forest of which any record appears.*

Yet it is difficult to attribute the Congressional action that followed to a temporary land agent's inexplicable change of mind. For one thing

the time interval between the report, written in Visalia and dated September 26, and the legislation introduced in Washington four days later, seems too short for a causative relationship. For another, except on the one matter of the four townships around the Giant Forest, the legislation bears no resemblance to the proposals made in Caldwell's Big Tree survey. The survey suggested that a fifth township—the one re-opened in May and then withdrawn again—and three of the four sections around the Grant Grove, all be again reopened to settlement. Instead, the Act of October 1 made their reservation permanent.

General Vandever's Visitor

There is another possibility. In his reply to Stewart's last communication on this problem, Robert Underwood Johnson had recalled "a Californian" who spoke off the record at a meeting of the House Committee on Public Lands which Johnson attended. This man, according to Johnson, "took up the matter of the text of the bill with General Vandever," and "may even have drawn the bill." But he couldn't remember his name! Although there is reason to doubt that the reservation of the Giant Forest was discussed at the specific meeting to which Johnson refers, the reference is nonetheless interesting.[23]

During the period when most of the park legislation of 1890 was being considered, there was, in fact, "a Californian" in Washington, Daniel Kindle Zumwalt. He was there as a guest of General Vandever, the Congressman whose name was connected with both park bills passed that year. Zumwalt was a resident of Tulare County and, unlike his host, was well acquainted with land matters in that part of the Sierra. There is evidence that he was aware of the impending legislation, for he later let it be known that his timely suggestion to the congressman had caused the four sections around the popular Grant Grove to be included in the Act of October 1.[24]

By accepting responsibility for that one provision he disclaimed, *in effect*, responsibility for the remainder. To attempt to give him credit for the reservation of the Giant Forest, then, is to challenge his story, a difficult task at this date. But it can be shown that he might have had reason for reticence.

With the exception of the one provision for which Zumwalt took credit, the third paragraph of the Act of October 1 was so unpopular in Tulare County that even the conservationists would not cheer it. Tipton Lindsey, one of the three who had spearheaded the efforts for the park's establishment, joined the County Supervisors, the Mayor of Visalia, and nearly the entire local officialdom in a petition for its repeal.[25] The colony whose future hung in the balance was well liked. But even more important was

the fact that Tulare County—where settlers and railroad had battled for years over land ownership, and where seven men were killed in the bloody Mussel Slough incident of 1880—was notoriously cranky on the matter of settlers' rights, however tenuous the legalities on which they rested.

Zumwalt, on the other hand, represented the railroad. He had been for years the local attorney and land agent of what Dr. Ira Cross once called the most "generously hated" railroad in the nation,[26] the Southern Pacific. One biographer gives him credit for having personally directed its activities during the Mussel Slough affair.[27] Clearly, it would have been foolhardy for him to have associated his name with the Giant Forest's reservation.

That Zumwalt was in Washington as a guest of the congressman whose name appears on the relevant legislation, that he was well acquainted with land matters in the Giant Forest area, that he apparently knew of the measures pending, and that he had reason to efface his own role does not prove that he authored the bill. But it makes him the most likely suspect.

It is reasonable to assume that in a matter of this magnitude Zumwalt was not acting for himself. And if his own responsibility for the Giant Forest's reservation cannot be directly established, the Southern Pacific Company's interest in the measure can. Its name appears with impressive frequency among the documents. The most striking example is a map of the full seven-township Sequoia Park (see page 79) on Southern Pacific stationary, dated October 10, 1890. On that date neither the colonists, the local conservationists, nor the California press were yet aware of the park's enlargement. Congressional documents *not* excepted, this is the earliest reference to Sequoia Park's enlarged boundaries extant![28]

The Southern Pacific and the Park

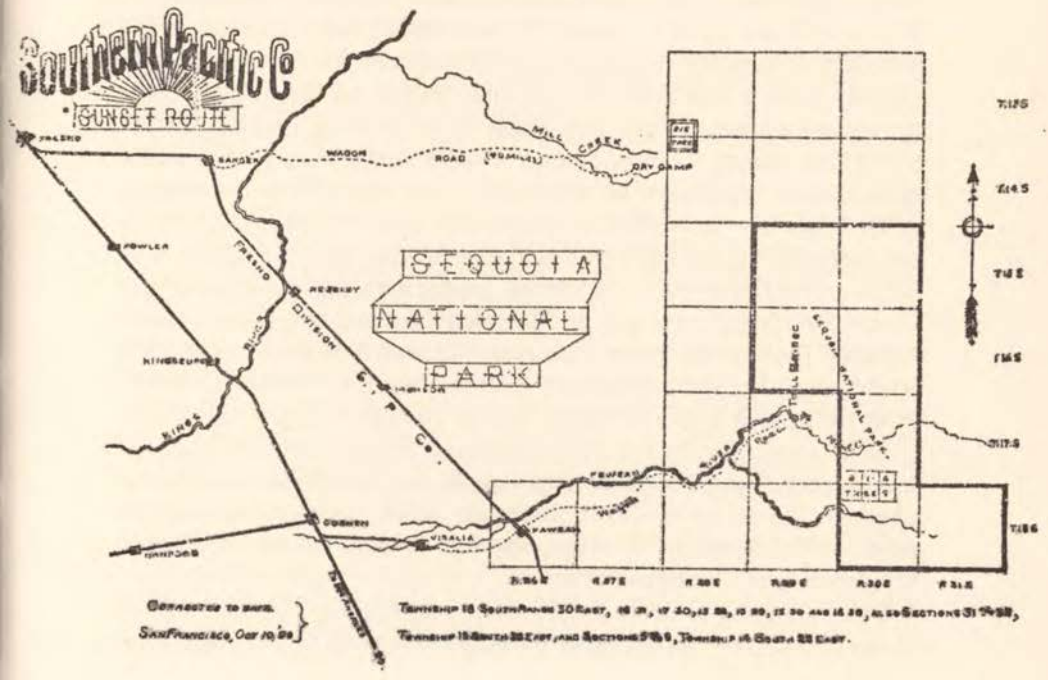
The suggestion that the Southern Pacific was deeply involved in the reservation of the Giant Forest seems rather provocative. In part this is because park historians have traditionally and understandably sought more appealing heroes; but there is another reason as well. Much of the popular support for park reservation came from a desire to save some of our landscape from the demands of private interests. Among these, the railroads seemed by far the most menacing. The campaign that in 1890 and 1891 resulted in two large national parks and even more extensive forest reserves was therefore regarded by many as essentially anti-railroad. The irony of it is that the railroads—and especially the Southern Pacific—already in possession of a vast domain, stood to gain by the establishment of parks and reservations.

One reason is obvious. The Southern Pacific knew that parks built

around natural curiosities would attract tourists and stimulate passenger traffic. Thus, as early as October 16, 1890, it announced plans to send a team of artists and photographers into Tulare County's "new park" (which George Stewart, who published the announcement, still assumed to be the two-township tract he had helped reserve).[29] This sudden concern with landscape photography caused one California conservationist to write Mr. Johnson anxiously, "Perhaps the Gov't better enquire a little into the S.P.R.R.'s active interest."[30] But in this case it was up to nothing more nefarious than the publication of a travelog.

Passenger traffic was not the only reason for the railroad's interest. By virtue of extensive government grants, it had acquired vast land holdings in California's central valley. It was therefore as much concerned with the preservation of the surrounding watershed as any farmer and was less inhibited by feelings of common interest with settlers in the hills in its choice of means for its protection.

This map, dated October 10, 1890, on Southern Pacific stationery, is the earliest known reference to the October 1, 1890 Act boundaries for Sequoia National Park. The Kaweah Colony, whose land claims were threatened by the new boundaries, and local conservationists did not know of the park's sudden extension until October 21.



Finally, the railroad owned large tracts of timberland in Oregon and northern California. It enjoyed an important position in the lumber industry that would be safeguarded by legislation to limit its spread. Furthermore, if the railroad could confine logging to regions distant from settlement, it stood to collect a substantial freight tariff on all lumber used in the state. Reservation of timberland in southern and central California was an obvious answer.

With respect to the Giant Forest vicinity specifically, one further consideration may have been involved. Not far to the north of the land claimed by the Kaweah colonists, a large lumbering operation had recently commenced, the Sanger (Smith and Moore) Mill. By virtually open use of dummy entrymen during the very period when Kaweah's claims were being subjected to microscopic examination, its operators had gained control of some 35,000 acres of timberland in the Converse Basin on the southern slope of the Kings River Canyon. Both Zumwalt and the railroad appear to have been involved in this venture.[31] With the nearby colony a potential competitor, the railroad may have taken special interest in the preservation of the lands the colony claimed.

* * * * *

One oversimplification should not be replaced by another. If the Giant Forest did not become a national park through the accedence of an enlightened Congress with the wishes of local public spirited citizens—if those citizens, in fact, opposed its reservation, and Congress, in the press of adjournment, neither knew nor questioned what it was asked to reserve—neither was Giant Forest's reservation merely a pawn move in railroad politics. To say that would be to overlook the contribution of William Andrew Jackson Sparks, a sworn foe of all railroads, whose cantankerous suspensions of 1885 made the Congressional reservations of 1890 possible. It would fail to note that even Zumwalt, although he was essentially a railroad agent and acted in that capacity, might have had a personal interest in wilderness preservation, as is obliquely evidenced by his partner's gift of "Zumwalt Meadow" in Kings Canyon National Park to the Sierra Club after Zumwalt's death. Most of all it would ignore the growing concern with the future of a national endowment as America began to notice that its frontier was virtually closed.

In an atmosphere where all proposals for forest reservation found a hearing, the Giant Forest became a park. Yet something as unatmospheric as the Southern Pacific Company, which had already shaped so much of California to its needs, appears to have railroaded through Congress the bill that made it so.

This evaluation of the railroad's role, made necessary by the problem of one forest's reservation, raises questions that press beyond that prob-

lem's bounds. Could not Zumwalt's presence in Washington explain the astounding rapidity with which Walker's and Lindsey's petitions were translated into law? And why was the name of Zumwalt's host on legislation to reserve the Yosemite watershed? Vandever was not Representative for that district, nor was he a member of the Committee on Public Lands. Stewart asked this rather significant question of Johnson in 1930. Holway Jones, the Sierra Club's historian, is working toward an answer today. Hopefully, further chapters to this story will soon be written.

REFERENCES

[1] *Visalia Delta*, August 28, 1890.

[2] *Report of the Commissioner of the General Land Office, 1886*, pp. 69–70. (Hereinafter cited as *Land Office Report.*)

[3] The name given to those who filed claims and deeded them to another for a fee. This device was often used to get around limitations imposed by the land laws on the amount of land one man or company could receive.

[4] Sparks to Register of the Visalia Land Office, February 6, 1886, and March 11, 1886. The first is cited in the *Kaweah Commonwealth*, May 2, 1891, the second in Jones, W. C., "The Kaweah Experiment in Co-operation," *Quarterly Journal of Economics*, Vol. VI, October, 1891, p. 64.

[5] See *Land Office Report, 1885*, pp. 201–2, and *Land Office Report, 1886*, p. 47. These reports make unusually fascinating reading.

[6] *Annual Report of the Secretary of the Interior, 1890–91*, p. iii. (Hereinafter cited as *Interior Report.*) See also *Interior Report, 1889–90*, p. xx.

[7] *Visalia Delta*, August 28, 1890.

[8] This sequence of events was related by Stewart to Enos Mills, August 29, 1916 (Tulare County Library, Stewart Collection). All subsequent histories of the park's establishment are based on these recollections.

[9] Walker's report to the Academy on September 1, 1890, is reprinted in *Interior Report, 1890–91*, pp. CLIX–CLX.

[10] The earliest reference to this, a remark attributed to the colonists in A. S. Evans' 1888 edition of *A la California*, and reprinted in *The Commonwealth*, December 24, 1888, pre-dates the period of active park agitation in Tulare County.

[11] *Kaweah Commonwealth*, September 20, 1890. The *Kaweah Commonwealth* succeeded the *Commonwealth* as the colony's organ.

[12] *Congressional Record*, Vol. 21, p. 10752. See also *ibid.*, p. 10740.

[13] Diary of Anna F. Haskell, 1890, entry October 21. Haskell family collection, Bancroft Library.

[14] In 1891 Stewart himself turned against the colony and published in the *Delta* a series of articles criticizing its leaders severely. His attack on Kaweah later reinforced the legend that he had been responsible for the reservation of its lands.

[15] See, for example, Stewart to Enos Mills, *op. cit.*, and compare with Mills, *Your National Parks*, Boston, 1917, pp. 99–100.

[16] Stewart to Gustavus Eisen, September 8, 1916, Tulare County Library.

[17] Stewart to Johnson, December 6, 1930, Tulare County Library. It is a commentary on the uncritical manner in which national park history is often approached to note that this legend gleefully persists, though no more than a glance at the bill that established Sequoia Park is required to dispel it. Its most recent repetition as

fact is in John Ise, *Our National Park Policy; A Critical History*, Baltimore, 1961, p. 105.

[18] Stewart to Johnson, *op. cit.*

[19] John Muir and the officers of the California Academy of Sciences knew of the forest, of course. But they were then primarily concerned with a more pressing problem, the preservation of Kings Canyon, which was in imminent danger. See John Muir, "A Rival to Yosemite," *Century Magazine*, November, 1891, and "Resolution of the California Academy of Sciences," *Interior Report, 1890–91,* pp. CLVII–CLVIII.

[20] National Archives, Interior Department, Records of the General Land Office (hereinafter referred to as "Archives"), Kaweah File, RG 49.

[21] Vandever to Noble, July 26, 1890, and August 4, 1890. Archives, Appointments Division, RG 48.

[22] "Report of Special Agent Andrew Caldwell on Giant Trees in California," Archives, RG 49.

[23] Johnson to Stewart, December 15, 1930, in Tulare County Library. The Minute Book of the House Committee records Johnson's presence at only one meeting, June 2, 1890. Had the reservation of the Giant Forest been discussed then, provision for it could have been included in the bill Vandever submitted July 28 (that is, unless it was originally planned to save it for the last day and thus avoid public debate).

[24] Menefee, E. L., *History of Tulare and Kings Counties*, Los Angeles, 1913, p. 402; Small, K. E., *History of Tulare County*, Chicago, 1926, pp. 464–5; Stewart to Fry, February 22, 1925, and Stewart to Col. White, June 8, 1929, Tulare County Library. Contemporary verification of Zumwalt's trip appears in the *Visalia Delta*, September 18, 1890, which notes his return. He had gone to San Francisco early in April to attend a convention of the Prohibitionist Party (*Delta*, April 3, 1890), and probably left from there.

[25] Archives, RG 49.

[26] *History of the Labor Movement in California,* Berkeley, 1935, p. 631.

[27] Guinn, J. M., History of the State of California and *Biographical Record of the San Joaquin Valley*, Chicago, 1905, p. 631.

[28] I am indebted to Mr. Holway Jones of the Sierra Club for the somehow not surprising information that the original draft of H.R. 12187, alone of all the park bills introduced in 1890, cannot be found at the National Archives.

[29] *Visalia Delta*, October 16, 1890.

[30] Charles D. Robinson to Johnson, December 12, 1890, in Johnson Collection, Bancroft Library.

[31] Robinson to Special Land Inspector Newsham, sent by Newsham to Noble, December 8, 1890, in Archives, Sequoia Park Files. Also Robinson to Johnson, July 3, 1891, in Bancroft Library. Robinson, an eccentric artist, is not a reliable source. But Zumwalt's proposal to extend a spur of the railroad to Sanger (*Delta*, October 3, 1889), gives some backing to his repeated charge. This extension, soon after carried out, made the depletion of the Sequoia in the Converse Basin possible. On the manner in which the land was entered see *San Francisco Examiner*, August 17, 1891, and McGee, L., "Mills of the Sequoias," Tulare County Historical Society, 1952, pp. 2–5.

Notes and Correspondence

RAINBOW'S DAY IN COURT

On December 14, 1962, the National Parks Association, the Sierra Club, the Federation of Western Outdoor Clubs, and Richard C. Bradley filed suit against Secretary of the Interior Stewart L. Udall in an effort to enjoin him "to keep open the diversion tunnels of Glen Canyon Dam until he has taken adequate protective measures to preclude impairment of Rainbow Bridge National Monument."

On December 27, 1962, the case was heard before Judge Alexander Holtzoff of the U. S. District Court for the District of Columbia. The conservation organizations were represented by Smith W. Brookhart; the Secretary was represented by Justice Department attorney Thomas L. McKevitt. The following are the proceedings of the case:

THE DEPUTY CLERK: National Parks Association, et al., against Udall, Civil Action 3904–62. Counsel step forward and identify themselves, please.

MR. BROOKHART: Good morning, Your Honor. My name is Smith W. Brookhart.

THE COURT: Yes.

MR. BROOKHART: I appear for the plaintiffs. The plaintiffs in this matter, The National Parks Association, the Federation of Western Outdoor Clubs, the Sierra Club, all of which are non-profit, educational and in general terms conservancy organizations, and an individual, Richard C. Bradley, a citizen of Colorado, seek to invoke the Court's authority in the nature of a mandamus to have the defendant comply with the provisions of the Colorado River Storage Project Act.

THE COURT: To do what, Mr. Brookhart?

MR. BROOKHART: To comply with the terms of the statute, wherein it provides, after authorizing many large construction projects along the river, in this language:

"That as part of the Glen Canyon Unit the Secretary of the Interior shall take adequate protective measures to preclude impairment of Rainbow Bridge National Monument."

THE COURT: Specifically, what relief do you seek?

MR. BROOKHART: Your Honor, the situation is this: that the Glen Canyon Unit has gone forward and is on the verge of being completed.

The two diversion tunnels that are now carrying the water of the river around the dam—we are informed through staff information that one of these tunnels will be closed about January 1.

THE COURT: What —

MR. BROOKHART: Next week.

THE COURT: What will be closed?

MR. BROOKHART: The diversion tunnel that carries the water around the dam.

THE COURT: I see.

MR. BROOKHART: I should say first that Rainbow Bridge Monument is located upstream on the Bridge Creek tributary of the Colorado River and it was designated as a monument 52 years ago by proclamation of President Taft. It is such a unique and unusual —

THE COURT: What is the name of this monument?

MR. BROOKHART: Rainbow Bridge National Monument.

THE COURT: Where is it?

MR. BROOKHART: It is in southern Utah, Your Honor. A copy of the Department of Interior bulletin has been attached to the pleadings.

THE COURT: What do you seek? I think I can follow your argument more intelligently if you tell me just what relief you seek.

MR. BROOKHART: We seek to have the Secretary take adequate measures to protect this monument from flooding from the reservoir that will build up behind Glen Canyon Dam.

THE COURT: You mean that the present project might cause the monument to be flooded, is that it?

MR. BROOKHART: There is no question but what it will.

THE COURT: You are seeking a mandatory injunction to compel the Secretary of the Interior to take steps to prevent the flooding, is that it?

MR. BROOKHART: That is right, Your Honor.

THE COURT: I see.

MR. BROOKHART: That is the substance, yes, Your Honor.

The Secretary of the Interior under the National Parks —

THE COURT: Well, now, before you proceed, you have told me what you seek in this action. What is the relief that you seek on this motion? This is a motion for preliminary injunction.

MR. BROOKHART: Yes. In particular, we seek an injunction against the closure of the diversion tunnels at Glen Canyon Dam until adequate measures have been taken for the protection of this monument.

THE COURT: You mean that the diversion tunnel would cause the flooding, or, rather, that you fear that the closing of the diversion tunnel might cause the flooding that you object to, is that it?

MR. BROOKHART: That is right, Your Honor.

On the basis of the Bureau of Reclamation's own studies which are quoted and analyzed in an attached affidavit which we present —

THE COURT: What standing do you have to sue here?

MR. BROOKHART: We have the standing of a citizen representing a large segment of citizens who appear to have a public duty enforced, and we contend that mandamus is the proper action for enforcement.

The public duty in this case is of interest to citizens generally.

The Secretary is proceeding in disregard of the directive of Congress that he shall take these protective measures.

THE COURT: My question to you was what legal status do the plaintiffs have to sue here?

MR. BROOKHART: Your Honor, I think I could answer that most easily by saying we have the same legal status as the citizens of Middlesex County in Massachusetts had who obtained a mandamus from the supreme court of Massachusetts to protect Walden Pond in 1960. We are in almost identical situation. In that case the statute passed by the legislature had authorized the commissioners to act as custodians of Walden Pond subject to the restrictions and directions of the deed.

There were two suits filed after the commissioners had permitted the pond to be violated, the reservations had been violated —

THE COURT: This was a Massachusetts state case.

MR. BROOKHART: That is right, Your Honor.

THE COURT: The principle involved here would be a little different.

Do you have any Federal case permitting a suit of this kind to be maintained?

I have in mind the leading case of Masschusetts against Mellon. That involved, of course, an unauthorized expenditure of funds and it was held that a citizen or a taxpayer or a state could not maintain an action to enjoin an unauthorized expenditure of Government funds.

MR. BROOKHART: I believe also that case, Your Honor, had the question of interpretation of the statute.

It is our contention here that there can be no question of interpretation. The intention is very clear. It was so stated in the report of the Congress at the time this bill was passed; when these measures, this proviso was included—the committee had this to say, this is on February 7 of '56, which is while the bill was pending in the Congress:

"It said that amendment No. 1, which contains this proviso, would direct the Secretary of the Interior to protect the Rainbow Bridge National Monument from impairment by construction of the Glen Canyon Unit; although the committee understands that the Department's plan for the Glen Canyon Unit already calls for such protection, this amendment assures that the necessary protective work will be constructed."

As Your Honor will recall in Marbury versus Madison it was said that where a specific duty is assigned by law and individual rights depend on the performance of that duty, it seems equally clear that the individual who considers himself injured has a right to resort to the laws of his country for a remedy.

Here there is an interest in the recreational facilities of this monument and the defendant is the responsible person not only for protection but for the maintenance, and this is in keeping with the policy of this country as it has been established ever since the National Parks System was established in 1916.

So that there is an interest, not an economic interest, but an interest that gives the citizen standing as was recognized in Massachusetts and is very clear here, that many thousands that have already visited the monument and the 25,000 members of the National Parks Association, as a large segment of the —

THE COURT: Well, now, so far as the corporate plaintiffs are concerned, no interest of theirs is affected. They are really suing pro bono publico, is not that so?

MR. BROOKHART: In a broad sense, yes.

THE COURT: Then you have one individual plaintiff. What is his interest?

MR. BROOKHART: Well, he has visited the monument. He is a user. He has enjoyed it.

THE COURT: In other words, his position is not any different from that of any other citizen of the United States.

MR. BROOKHART: Except that it is perhaps more direct, having enjoyed it, as has the defendant himself.

THE COURT: I see.

MR. BROOKHART: If I may, I would like to point out that the cases which are usually cited and which the Government has cited in this instance, turn on either a question of interpretation of law, what was the intent of Congress, which I have already referred to here, or they were individual cases such as the right to a position, some discretionary act on the part of some Government official.

We do not have that here. It is clearly established that this is a directive that calls for a ministerial act and it is so recognized by the defendant.

True, he has sought funds year after year in Congress to bring about some construction to carry out this mandate, and without success.

But his power is still there to prevent the flooding which will ensue from the closing

up of the tunnels because once the tunnels are closed, it is inevitable that the flooding will reach the monument.

The details and the engineering data which are analyzed in an attached affidavit establish this fact and I don't think there will be any contest on it because these are taken from the official reports pertaining to the dam and the monument.

It is estimated that unless protective measures are taken when the reservoir is full it will be within the monument 95 per cent of the time—it will reach the monument—and it will be throughout the monument 46 per cent of the time, this depending on the draw down and the flood season.

If I may allude further, Your Honor, to the Court's reasoning in the Walden Pond case —

THE COURT: What case?

MR. BROOKHART: The Walden Pond case, Nickols versus Commissioners of Middlesex County at 166 Northeastern 2nd, 911, decided May 3, 1960.

The factual situation is comparable almost one hundred per cent. The only difference there being that this is a deed of the Walden Pond by the Emerson heirs and others, whereas in this case, we have a national monument established by proclamation of the President.

THE COURT: Who were the plaintiffs in the Walden Pond case?

MR. BROOKHART: There were two sets of plaintiffs. First, there was a taxpayers' suit which was filed on September 13 —

THE COURT: I thought that was it. You know many of the states permit taxpayer's suits to be brought. The Federal rule is that a taxpayer's suit may not be brought.

MR. BROOKHART: Well, that was the rule in Massachusetts. This suit did not prevail. The taxpayers' suit for an injunction was disallowed, dismissed, and about two weeks or three weeks later, four citizens filed for mandamus and it was these —

THE COURT: What is the citation to the Massachusetts case?

MR. BROOKHART: 166 —

THE COURT: 166.

MR. BROOKHART: NE 2nd.

THE COURT: Northeastern.

MR. BROOKHART: Northeastern 2nd, 911, May —

THE COURT: Have you the book with you?

MR. BROOKHART: I have —a

THE COURT: Have you a copy of the opinion?

MR. BROOKHART: Yes, Your Honor.

(Hands to Court.)

THE COURT: You may proceed, Mr. Brookhart.

MR. BROOKHART: I would point to one additional provision of the law.

I am now speaking of the Colorado River Storage Project Act, which has the proviso that the Secretary shall take adequate measures to protect the monument.

In Section 3, the final sentence states:

"It is the intention of Congress that no dam or reservoir constructed under the authorization of this act shall be within any national park or monument."

That is why I say that there can be no question about the intention of Congress when it added this proviso for the Secretary to act affirmatively to protect the monument.

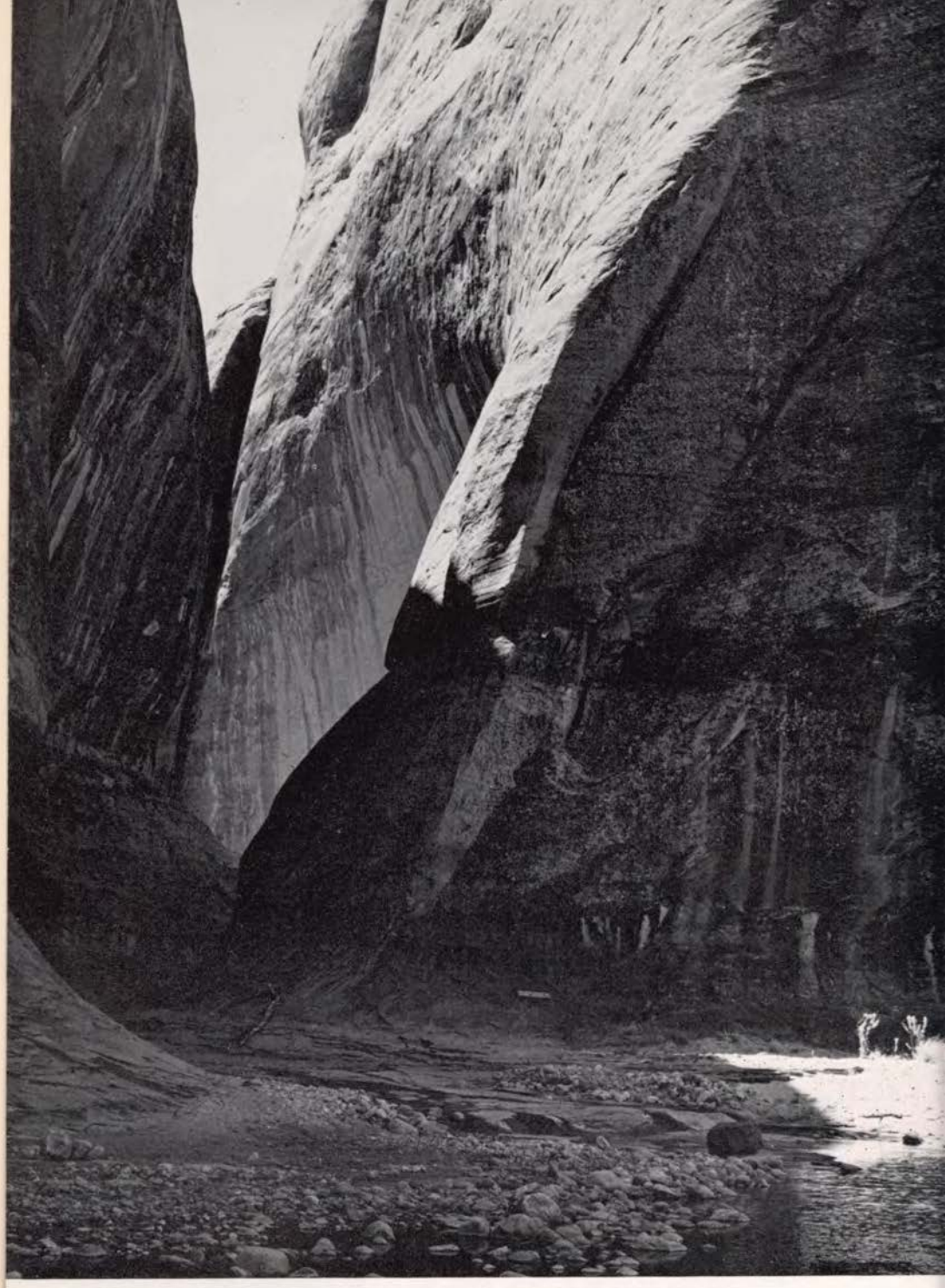
So our position is that we have standing as citizens by mandamus to enforce a public duty of interest to citizens generally, as stated in the case Your Honor holds.

Rainbow Bridge by Philip Hyde

End of the Rainbow?

An uncertain future awaits Rainbow Bridge and the small national monument which surrounds it in southern Utah; conservationists' efforts to have the Secretary of the Interior comply with the provisions of the Upper Colorado Project Act, which require protection of the national monument from the waters of Glen Canyon reservoir, have so far failed. The story, however, is not yet complete.

Bridge Canyon Pool by Philip Hyde



The Narrows at the juncture of Bridge Creek and Aztec Creek by Philip Hyde

Lake Powell's depth here would fluctuate from zero to 220 feet.

Would you care to see a more attractive picture as to the bridge? That gives you some idea.

(Hands up picture.)

This illustrates why it is of such outstanding interest. It is a very large bridge and I believe in the Navajo legends is said to have been made from a rainbow. That is how it got its name.

THE COURT: Mr. McKevitt.

MR. MCKEVITT: Your Honor, with me at the counsel table is Mr. Weinburg of the Department of the Interior.

THE COURT: Beg your pardon.

MR. MCKEVITT: With me at the counsel table is Mr. Weinburg of the Department of Interior.

Your Honor, naturally, our main opposition to this preliminary injunction is based on the obvious fact that these plaintiffs have no standing to sue.

I think that stands out as they point out that three of them are corporations who are interested in conservation matters, having no further interest, whereas the fourth is a citizen of Colorado.

THE COURT: What is your point?

MR. MCKEVITT: My point is, of course, that they have no standing to sue, to bring this suit at all.

Secondly, I thought I would like to explain that it looks on the surface as though the Secretary of the Interior is going exactly contrary to the direction of Congress.

Now, that is not correct, Your Honor. It is true that in the '56 Act authorizing the construction of the Glen Canyon Dam, it has these two provisions, one of which is that it shall take adequate steps to protect this particular monument, and the other, which says that it shall not affect a national monument.

However, in the last three appropriation acts of the Department of the Interior, whenever the Secretary would ask for additional funds in order to protect this particular national monument, Congress changed its mind, quite definitely changed its mind, and told the Secretary not only that they would not appropriate the funds but —

THE COURT: The statute is there. They have not modified the statute?

MR. MCKEVITT: Yes, Your Honor, because in the appropriation act —

THE COURT: How did they modify the statute?

MR. MCKEVITT: Because by saying this specifically, each one has this provision in it: it says that no part of the funds herein appropriated shall be available for construction or operation of facilities to prevent waters of Lake Powell from entering —

THE COURT: What is that again?

MR. MCKEVITT: No part of the funds herein appropriated shall be available for construction or operation of facilities to prevent waters of Lake Powell from entering any national monument.

THE COURT: Perhaps I misunderstand the facts. My understanding is that the plaintiffs are not asking the Secretary to do anything that would cost money. On the contrary, they are asking him not to close this diversion tunnel.

To fail to do something does not take any appropriated funds.

MR. MCKEVITT: No, Your Honor, but in order to protect this monument, you would have to build two additional smaller dams and the Secretary—now, the project itself is constructed in a certain way. It has to be opened in order to operate it.

Now, in order to protect —

THE COURT: I am afraid you do not get my point. Perhaps I did not make it clear.

I understood the plaintiffs to claim that if you close the diversion tunnel, water going through that tunnel will flood the grounds of this monument. They are seeking to stop you from closing that tunnel.

MR. MCKEVITT: That is right, Your Honor.

THE COURT: That does not take appropriated funds. It does not take any funds.

MR. MCKEVITT: No, it doesn't, Your Honor, but I simply want to point out that because of what Congress has done, it indicates that they have negatived their earlier assertion.

In other words, it is not true —

THE COURT: No, no. I am not going to construe the act of Congress as being modified by these limitations on appropriations. It has been held time and time again that limitations on appropriations do not modify permanent statutes.

MR. MCKEVITT: Well, Your Honor, the legislative history of this particular appropriation act will show that it did, because they were talking about it specifically.

In fact, at one point Chairman Cannon of the Appropriations Committee said that that act —

THE COURT: Suppose you tell me about the facts. Will this monument be flooded if this diversion tunnel is going to be closed?

MR. MCKEVITT: It will eventually, yes. The particular plans are something like this, that we will start to close one of these tunnels about January 15, or perhaps the 21st. That is the earliest.

Now, that is simply a matter of preparing because your large waters will be collected later in April.

Now, of course, that is the very reason for which this dam is constructed, in order to do that, so that about April —

THE COURT: You say closing this diversion tunnel will eventually cause a flooding, is that it?

MR. MCKEVITT: Well —

THE COURT: Does that not practically destroy the national monument?

MR. MCKEVITT: No, it would not, Your Honor.

THE COURT: Why not?

MR. MCKEVITT: Because at most, Your Honor, they have had a survey which has found out it will not cause any structural damage to it, and, secondly, the waters —

THE COURT: But you would not be able to drive through flooded land.

MR. MCKEVITT: The waters will simply back up into this canyon, which actually, I think, would make it probably more accessible than it is now. This is way out —

THE COURT: How would it make it more accessible?

MR. MCKEVITT: Because I think you could go up by stream, perhaps, to get to it.

THE COURT: What?

MR. MCKEVITT: You could go up the waters of the reservoir and get to this, get some access to it. That, however, is not —

THE COURT: Well, I do think that all these matters are for the discretion of the Secretary.

MR. MCKEVITT: Your Honor —

THE COURT: I am not going to tell the Secretary how to carry out an act of Congress.

MR. MCKEVITT: I suppose I want to say this, Your Honor. The Secretary is really in sympathy with these people who are suing here. They are interested in the national monument. The Secretary is interested in the national monument.

It is simply here that this has been authorized by Congress and —

THE COURT: Your point here is, I judge from what you have been saying, there is no standing to sue, and, second, that this is a discretionary act on the part of the Secretary.

MR. MCKEVITT: Yes, Your Honor, primarily, of course, no standing to sue, and I don't think there is any justiciable controversy between these plaintiffs and the Secretary at all. There is no —

THE COURT: I do not follow you. You talk more rapidly than I can think. What is your point?

MR. MCKEVITT: I said there is no justiciable controversy here. There is nothing between these plaintiffs and the Secretary that creates the essence of a law suit. They have no rights that are being —

THE COURT: Is there anything else that you wish to add?

MR. MCKEVITT: That is all, Your Honor.

THE COURT: Do you wish to say anything in reply, Mr. Brookhart?

MR. BROOKHART: The Section 8 of the act under which the Secretary also has power and authority and a direction to acquire and take care of recreational areas is the section that is referred to in this appropriation that counsel is speaking of.

In the appropriation act after specifying the dollar amounts, it is merely provided that no part of the funds herein appropriated shall be available. They specify for other purposes, and as Your Honor has —

THE COURT: Speak up, please.

MR. BROOKHART: As Your Honor has indicated, this has nothing to do with the statute of 1956.

THE COURT: I am not going to decide this case on that point at all.

MR. BROOKHART: Thank you, Your Honor.

THE COURT: The Court is of the opinion that the plaintiffs have no standing to sue. The proposition of law that a citizen having no interest separate and apart from the public generally has no standing to bring suit to compel or to enjoin a performance of a duty imposed on a Government official by statute is well settled, Massachusetts versus Mellon, 262 U.S. 447.

The case on which the plaintiffs rely decided by the supreme judicial court of Massachusetts, Nickols versus Commissioners of Middlesex County, 166 Northeastern 2nd, 911, which involved the famous Walden Pond, is predicated on the proposition of Massachusetts law that a person has standing as a citizen by mandamus to enforce a public duty of interest to citizens generally.

This is not, however, the Federal rule.

Moreover, even if there were standing to sue, the activity involved here is in the discretion of the Secretary. It is not a ministerial duty. The manner in which he should preserve the national monument rests largely in his own discretion.

For these reasons the motion for a preliminary injunction is denied. You may submit proposed findings of fact and conclusions of law and a proposed order.

In denying the motion, Judge Holtzoff stated these conclusions of law: "(1) The plaintiffs are without standing to sue; (2) the plaintiffs cannot prevail on the merits; (3) the discretionary acts of an administrative officer are not subject to judicial direction; (4) the provisions of the Colorado River Storage Project Act remain in force. Their execution lies within the discretion of the Secretary; and (5) Relief in the nature of mandamus will issue only to require performance of a clear and positive administrative duty."

In early January 1963, the application was denied on appeal to the Circuit Court of Appeals and again in the Supreme Court of the United States. Subsequent action in this important national park matter will be recorded in later issues of the *SCB*.

"FACTS"

Senator Maurine Neuberger of Oregon introduced into the *Congressional Record* of October 2, 1962 the minutes of a meeting of the timber policy implementation committee of the National Lumber Manufacturers Association, held in Chicago on June 14, 1962. These minutes describe the committee's launching of a program of "massive" public indoctrination in the goals of the National Lumber Manufacturers Association, such campaign to be known as FACTS, standing for "*F*ederal *A*nd *C*ommunity *T*imber *S*upply." Excerpts from the minutes and an accompanying "Prospectus for the Timber Policy Implementation Committee Program" follow:

"Chairman Giustina briefly outlined the appointment of the committee by NLMA President Arthur Temple, Jr., and . . . explained that the committee had been requested to implement a public relations program through a "grassroots" organization to activate broad public support of the four points which the industry felt would solve its Federal timber problems. These four points, he added, dealt with allowable cut, timber appraisal procedures, and proposals for study and revision of Government timber sales contract forms. . . .

"Mr. [Mortimer B.] Doyle [executive vice president of the National Lumber Manufacturers Association] recounted the numerous efforts made in the past by various industry groups to bring about parity in bargaining between Federal administrators and members of the industry dependent on Federal timber. All of these efforts, he stated, had been fruitless and the situation had progressively deteriorated. . . . The [Forest Management] committee, he added, had concluded that industry and community forces must be combined to develop enough strength and influence to impress the Federal agencies of the urgency of the problem. . . ."

(From the "Prospectus," as found in the October 2, 1962 *Congressional Record*)

". . . Communities dependent upon Federal timber for fundamental industrial employment must be made aware of their own stake in the continued operations of firms engaged in logging and the production of lumber and wood fibers. . . .

"The increasing unemployment in the forest industries and the advantage of discussing the issues in terms of continued employment give the overall effort a sense of urgency which should not be underrated. . . . Local press, radio and television outlets, local elected officials, service clubs, and other community spirited organizations and citizens should react positively to an effort which is designed to strengthen the economic base for their own community. . . .

". . . where sawmill towns are principally involved, the community leaders, in most instances, may be directly identified with the logging or sawmill operators. If such individuals assume fundamental leadership for the campaign, the project may be attacked by the opposition on the basis that it is self-serving and is a means for the operators to strengthen their own position by using the community. Such opposition would reduce the basic effectiveness of the program since much time and effort would be spent in defending the integrity of the program . . . however, [by] using county seats in Federal timber areas as the basic organizational unit, it would be possible to identify with the public interest from the outset and win the support of elected county officials as well as teachers, lawyers, doctors, and other professional people, with the mill operators participating as interested local citizens . . .

"The county is the basic Government unit which derives direct financial return from Federal timber sales which is earmarked for building roads and for public education. Similarly, county seats afford an opportunity to make use of such newspaper, radio, and TV facilities which may exist in forested areas. It appears logical on that basis to concentrate on the county seats in forested areas as the first places in which to organize local action committees.

"While there are approximately 6,000 communities in the United States having a population of 2,500 or more, . . . there are only 3,072 counties in the United States plus 24 election districts in Alaska. These latter 3,000 political units would require screening against Federal timber involvement to determine areas of initial concentration for organization. . . . All seven Members of the Washington delegation in the House of Representatives and both Senators from that State reside in six communities which are county seats. Three of the four Oregon Congressmen and both Senators . . . also reside in county seats. . . .

"Those communities dependent upon the forests in which national legislators reside would receive top priority for the initial organization. . . . Attempts would be made to organize all county seats in areas having Federal forests. . . . In general . . . the program would be best served by having forest industry firms provide nominations of doctors, lawyers, clergymen, club men and women, elected officials, and other community opinion leaders who have demonstrated an understanding of the correlation between community economic health and a strong forest industry. Direct contacts with these people will be conducted personally by timber policy implementation committee program staff representatives during the active organizational phase. . . .

"It is contemplated that direct solicitation of funds from purchasers and processors of Federal stumpage, including all segments of the forest products industry, pulp and paper, plywood, railway ties, and other forest manufacturers, and lumber manufacturers will be undertaken with rates established on the basis of volume of Federal timber purchased last year by each supporter. [The scale of recommended contributions was then given, ranging from $100 for less than 5 million board feet of Federal timber purchased, to $10,000 for over 100 million board feet.] . . .

". . . it will be necessary to assemble the names, interests, and capability factors of key residents of affected communities and to determine an itinerary for a staff member to methodically tour the regions . . . [He] will be armed with a well-conceived simple visual presentation, supported by reading material so that he can make a presentation to key leaders in a small, informal session designed to acquaint them with the facts. A more elaborate, sound-color filmagraph or motion pictures should be developed to explain the issues, demand the action, . . . to larger audiences. . . . The staff will be obliged to develop a series of patterned speeches, news stories, radio scripts, and television materials for use by the local group. . . It is essential that the local chamber of commerce . . . be approached immediately. . . .

"Immediately after announcing the creation of the local committee, . . . it will be essential to involve the local radio, TV, and newspaper outlets in a planned sequence of editorials, feature articles, TV panel shows, radio interviews, and similar public service activities . . . a month following the initial meeting, arrangements should be made for a speech bureau . . .

"The series of speeches at service clubs will pave the way for a communitywide rally . . . It will be necessary for a staffman to arrive in the community several days in advance of community rally to assist local leaders to develop an audience. Where possible, it would be desirable to have congressional representatives on hand to speak in favor of the overall program. . . . Consideration should be given eventually to a countywide rally, a statewide rally, and a national rally . . .

Mountaineering Notes

Edited by CARL WEISNER

NEW ROUTE ON THE DRU (FRENCH ALPS)

In two and one-half days of climbing during July, 1962, Gary Hemming and I established a new route on the Petit Dru, one of the outstanding peaks in the Mont Blanc area of the French Alps. This route lies on what might be termed the "Northwest Shoulder" and ascends between the north and west faces until it meets the west face route at the famous 90 Meter Dihedral. Thus it rises about half the distance to the top of the mountain—more than 3,000 feet above the glacier on this side—before touching another route. From the 90 Meter Dihedral we followed the west face route to the north face, the north face route to the Bonatti Pillar, and the Pillar to the Voie Normale, which brought us to the summit at 11:30 A.M. the third day, after climbing parts of five different routes.

Although the 1700-foot new route presented no snow and ice problems, rock difficulties were fairly severe in both free climbing and direct aid. Until we met the west face, route finding was easy because our line of ascent was direct. We followed one crack system for 800 feet without deviating more than 30 feet to either side. We placed 96 pitons on the Northwest Shoulder and removed 94. After meeting the west face route, almost all necessary pitons were in place, and we encountered no difficulties comparable to those below. The rock was generally excellent and the scenery magnificent.

We climbed the mountain on our second attempt. On the first attempt we bivouacked 1,000 feet above the glacier; clouds, showers, and a strong south wind greeted us in the morning. Questionable weather caused us an agony of indecision lasting nearly three hours. Approaching lightning then tipped the scales in favor of a descent, and we went down via rappel. That night, camping below the Dru, we witnessed the most terrific lightning storm I had ever seen.

On our second and successful attempt we had two days of fine weather, almost too hot at times. A storm blew in on the third day, but it was of little consequence.

The Northwest Shoulder provides the most direct route to the top of the Dru. The Bonatti Pillar has a finer line, but a nasty approach in the form of an ice couloir. Our route to the top is about as formidable as the northwest face of Half Dome. Although not as difficult technically as the Taylor Route on Middle Teton, this is certainly the finest climb I have made under alpine conditions.

ROYAL ROBBINS

EAST FACE OF PINGORA (WIND RIVER RANGE)

In July, 1960, Ken Weeks showed me a picture of Pingora, an 11,884-foot mountain in the Wind River Range of Wyoming. I was impressed by its sweeping east face which rises 1700 feet above Lonesome Lake.

In mid-July, 1962, two other climbers and I packed into the Wind Rivers, but after six days of rain we packed out. With Pingora's east face still in mind, I asked Jim Yensen, a relatively new climber, to join me. We packed into the Cirque of Towers on August 7 and went to bed early, only to be awakened by rain around midnight. Nevertheless, when we arose at 5 A.M., a beautiful, cloudless sky greeted us.

We climbed third class to a point about 25 feet to the right of the bottom of the East Face Dihedral. Rope climbing began here, with a delicate traverse left into the

Dihedral on high angle friction. The climb continued up the Dihedral, passing the prominent overhang on the left and following a system of sometimes slightly overhanging open books. As the angle increased we bore to the left of a chimney blocked by a large roof. We continued up high angle rock via face climbing, cracks, and then a chimney, to a broad ledge from which a long pitch led to the apparent summit by way of a shallow chimney. We rappelled 50 feet to a notch and climbed third class to the true summit.

On the descent, darkness caught us and we bivouacked. The climb took us 14 hours and had 13 pitches. We used two 150-foot ropes and placed about 65 pitons, varying from knifeblades to 2-inch bong bongs. We used only 8 pitons for direct aid. We carried no bolt equipment. Climbing difficulty was 5.8 and easy sixth class.

HARRY L. DALEY

STEEN'S MOUNTAINS (OREGON)

Steen's Mountains are a range of 9,000-foot peaks standing above the desert of southeastern Oregon. The mountain slopes are gentle on the western side and precipitous on the east. At noon on April 19, 1962, Les Wilson and I arrived to investigate the climbing possibilities. We soon found how suddenly the weather can change in that northern desert. During the afternoon a sudden storm dropped the temperature 30 degrees in half an hour and covered the peaks with clouds and snow. Next morning we climbed the northernmost of the higher peaks via a third-class rib in the southeast face. An icy wind drove us from the summit after we built a small cairn. The following day was sunny and fairly warm, so we climbed the east summit of Steen's Mountain via the southeast ridge. The route was third class; we used a rope while descending some questionable snow slopes. Again we found no cairn on the summit.

There are numerous other ridges and peaks that would make interesting climbs from the east. Most peaks have probably been climbed, but from the west side.

GEORGE WALLERSTEIN

THUNDERBOLT (PALISADES)

On July 4, 1959, Richard Gnagy and I made a new ascent of Thunderbolt Peak via the right side of the east buttress. The route starts in the snow couloir between the east and northeast buttresses. This is the right couloir shown in sketch 17 on page 167 of the *Climber's Guide to the High Sierra* (1961 edition). The route goes constantly up and to the right and is not too difficult to find. At one point, there is a choice of two cracks to climb. The crack on the right should be climbed, or considerable delay will result. The route then works over the headwall and on to the top of the buttress. It follows the crest of the buttress to the low point on the summit ridge which is north of the summit block. We took five hours to reach the summit ridge. The climb was good fifth class.

ELLEN WILTS

KINGS CANYON CLIMBS

The following climbs in Kings Canyon have not been previously mentioned in the notes. We hope these route descriptions will stimulate more interest in this fine climbing area.

Bulldog Rock and Hathaway's Delight

These two rock summits sit on a ridge above the new bridge crossing the South Fork of the Kings River just west of Cedar Grove. Merle Alley and I climbed them

(Continued on page 105)

Two kinds of exposure
illustrate the intimate relationship
between the climber and his route

Climber's Camera

By Henry W. Kendall

Climbers almost always carry a camera. It is one of the last pieces of nonessential equipment to be discarded in preparation for a difficult ascent. In one way, however, a camera *is* an essential piece of equipment because, beyond tenuous memory, photography is the only means by which the climber can relive and reënjoy the qualities of an ascent. These qualities are never entirely captured, even by a delicate photograph skillfully taken from the approach to a climb. If they could be, a climber could enjoy a route from afar and would never need advance beyond the first full view of an attractive route. The great sweep of a granite face, the soaring of a slender spire—these are the things that help draw the climber to his sport. To move on the narrow ledge, the delicate, high-angle slab, the rough-walled chimney—these are the ways to see and enjoy the rock, through the intimate relationship between the climber and his route.

Although rock climbing is only a part of mountaineering, the richness of Yosemite Valley climbing—the variety of the rock and the problems it presents—has lured a large number of skilled climbers and provides the only way to see at close range, and thus to understand and enjoy most fully, the great walls and spires of the Valley.

For five years in California I had the opportunity to climb and to photograph many of the fine routes in Yosemite Valley, to watch climbers making their way, sometimes slowly, sometimes relatively quickly—almost always gracefully—along the paths that call them out to climb, the places, as Conrad Kain said, "where the clouds can go." For those people who never tread these private ways, I hope the photographs here will provide a glimpse into the climber's world.

* * * * *

El Capitan, South Buttress (Sixth-class face)

The enormous buttress of El Capitan is one of the best known features of Yosemite Valley. Long before the successful ascent of the buttress, climbers had searched for feasible routes up its near-vertical granite. Here, after the passing of a light rain squall, John Harlin continues the tedious work of drilling tiny holes in the rock, one after another, to receive the expansion bolts that allow him to progress upward. Although this attempt had to be abandoned, it was a fine example of sixth-class climbing on an open, unflawed face.

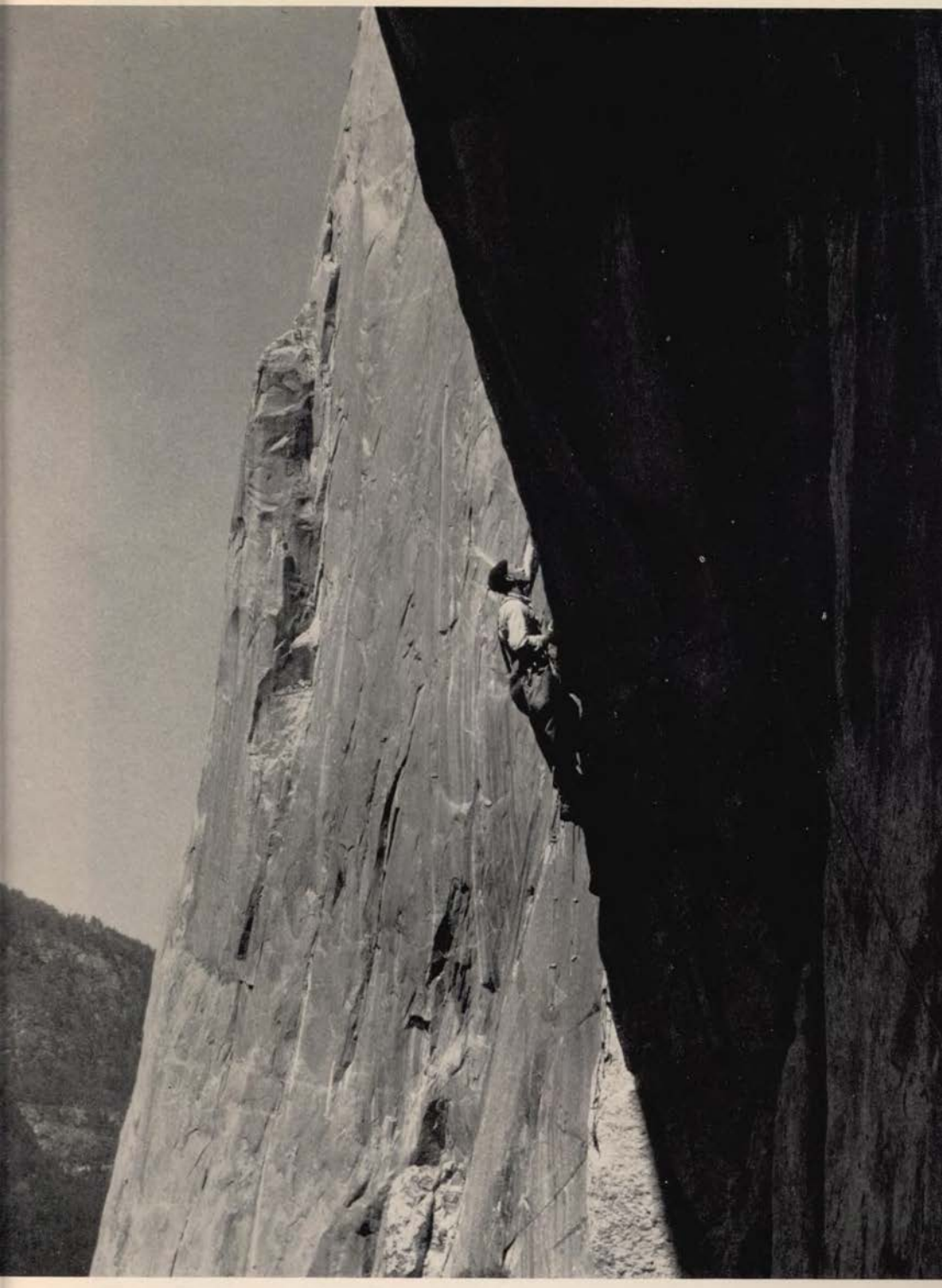
EIGHT PHOTOGRAPHS BY HENRY W. KENDALL

The Roof, Lower Cathedral Rock (Sixth-class roof)

Roof climbing, although not always difficult technically, provides some of the more spectacular situations for the camera. This roof on the northwest face of Lower Cathedral Rock is nearly horizontal with a single excellent piton crack reaching out from a wall at the root of the roof to a network of cracks in the somewhat flawed and broken vertical section that follows it. Here Tom Frost is reaching the middle of the vertical section. The climbing rope leads through the piton line in the crack under the roof and a second rope falls slack below him. The second rope can be used if excessive friction from the series of pitons makes it too difficult to manage the first one easily.

The First Pitch of "The El Capitan Tree" (Sixth-class overhang)⟶

This classic ascent starts, as the old guidebook says, with a "110-foot pitch (average angle 110°)." Here from the belay position on this pitch, we see Dave Sowles working upward under the long, gentle overhang, placing pitons in a crack that will take him out and up over the lip of the alcove roof above the belayer. Climbing with slings or ladders (this part of the climb is without hand or foot holds), he will reach a fine ledge from which "The Tree," growing alone in a higher, more spacious alcove, may be reached without further direct aid. The South Buttress of El Capitan is in the background.

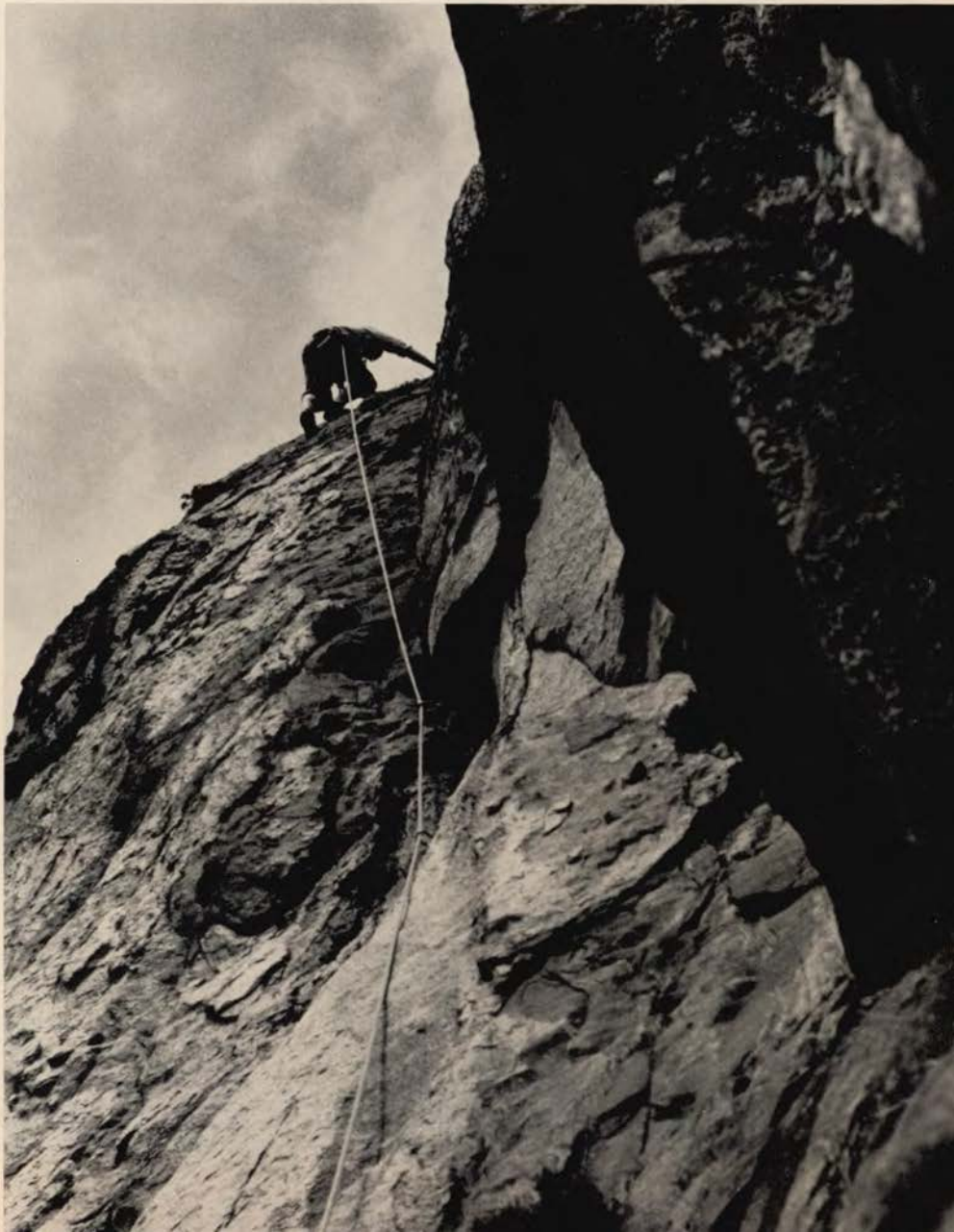


East Arrowhead Chimney

This chimney, surely the most spectacular in Yosemite Valley, is rarely climbed because of the loose, rotten rock that covers its floor for the first third of the climb. Great vertical planes of nearly unflawed granite form the walls of the chimney. It reaches its greatest depth in a recess, gained by a series of narrow smaller chimneys, capped by a solid forty-foot roof. The photograph was taken in the recess from a floor thirty feet below the great roof. The right wall of the chimney, out beyond the recess, forms part of the Arrowhead Arête and, farther out, the prominent spire of the Arrowhead.

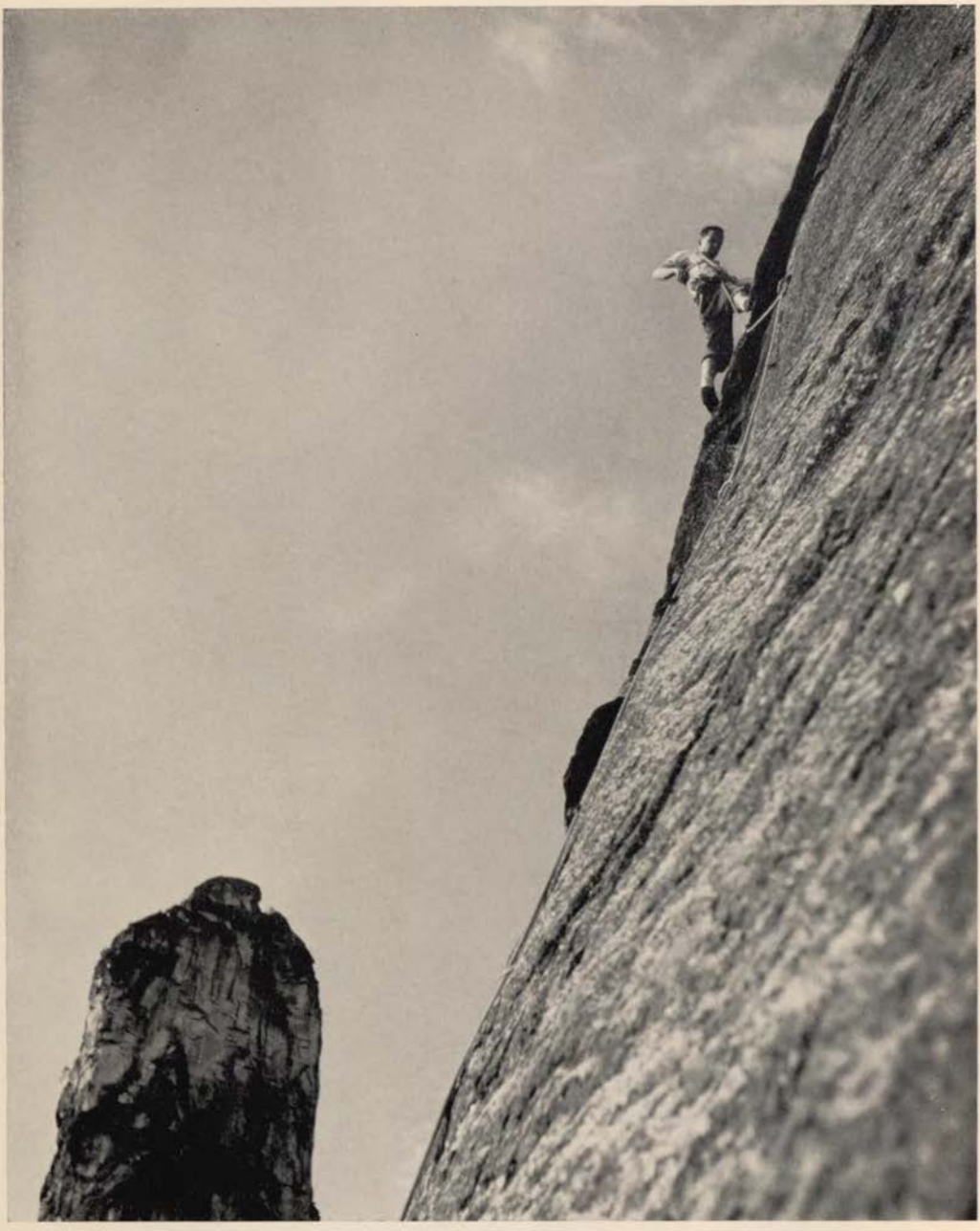
Bivouac Pitch, East Buttress of El Capitan (Fifth-class face)

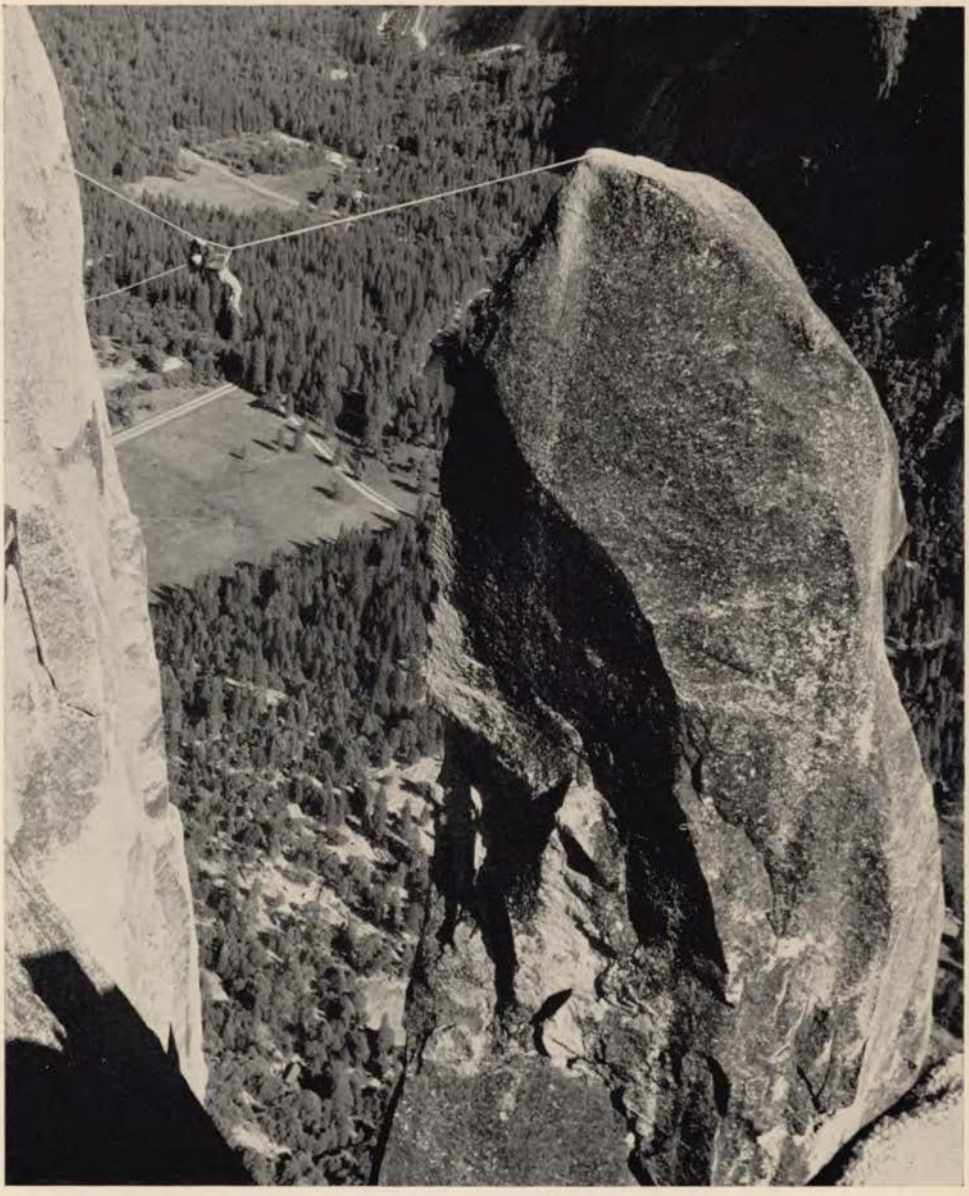
The East Buttress of El Capitan is one of the fine climbs in Yosemite. With a minimum of direct aid required, it combines a variety of open face climbing of all degrees of difficulty with sound rock and fine views of the valley. About two-thirds of the way up, the route reaches a series of small ledges—one of them called *Bivouac Ledge*. We named the lead below this ledge the *Bivouac Pitch*. A fifth-class lead of moderate difficulty, it traverses upward underneath a jutting overhang. The photograph shows Tom Frost nearing the exit of the pitch, an example of high angle climbing on an open face.



East Buttress of Middle Cathedral Rock (Fifth-class overhang)

The expansion bolt line in the photograph was the only artificial aid in this fine buttress climb. The line ends below the small, difficult overhang. Here Tom Frost reaches for a piton just after completing the first ascent of the overhang without using direct aid. Lower Cathedral Spire rises in the background. Like the East Buttress of El Capitan, this route not only has pitches of all degrees of difficulty on very sound rock but also provides fine views of the valley. The second pitch of the ascent during much of the climbing season is the practice area for a community of vigorous, ill-tempered ants.





The Lost Arrow (Tyrolean Traverse)

Of all the spires of Yosemite Valley, the Lost Arrow, rising from the face between Yosemite Falls and Yosemite Point, affords the most renowned climbing. Before our ascent of the Lost Arrow, while standing on the valley rim, we threw a rock with a kite string attached over the summit of the spire. Later, after climbing the Arrow, we were able with the help of our support party back on the valley rim, to rig the 150-foot ropes necessary for a Tyrolean traverse. Here the last man, Paul Delaney, leaves the summit for the trip to the rim. This particular traverse is exceptional for its exposure and length. It passes above the outside of the Arrow Chimney; at its center it is more than 1000 feet above the cliff base below. The Tyrolean traverse is used rarely in climbing because of the difficulty of setting it properly with a small climbing party. In this case, the difficulties were more than offset by the spectacular nature of the traverse.

North Face of Sentinel Rock (Rappel)

Here, on a hot July afternoon, Tom Cathcart rappels down over the first pitch of the north face route on Sentinel Rock. The rappel, the standard technique of descent over difficult rock, is so widely used that it has become almost a symbol of technical climbing.

(Continued from page 95)

for the first time on June 13, 1957. We approached the upper summit, Hathaway's Delight, via a gully to the west involving 500 feet of fifth-class climbing, with one sixth-class overhanging chockstone halfway up. From the south notch, we traversed east to a platform below the high angle trough leading to the summit. We rappelled down the west face over a climbable route which could easily be used from an approach directly up the ridge.

One more short rappel and some third-class climbing down past a small irregular pinnacle brought us to the notch behind Bulldog Rock, the lower but more prominent summit. An easy ledge led east around to the north face of the rock, overlooking the river. From the top of a block, we used a direct aid step to reach a narrow ledge running up and to the right. At the end of the ledge, we needed more direct aid to get to the steeply sloping west face, which provided delicate friction climbing to the top. After rappelling to the ledge, we climbed down the rest of the ridge and followed a dry watercourse east of the ridge to the bridge. We favor this approach for future ascents.

Spook Spire

Above Camp 4 in Cedar Grove a 200-foot rock tower stands out from a granite cliff. It is difficult to see from most vantage points, but at certain times of the day its shadow is visible. Merle Alley, Jerry Dixon, and I first climbed it on May 17, 1958. We did some fourth- and fifth-class climbing to reach the notch behind the spire. Climbing out onto a ledge on the east face, we made a long reach to connect with a crack going diagonally up and left, and then nailed to the summit.

Windy Cliff–South Arête

Merle Alley and I made the first recorded ascent on July 20, 1954. This route heads for the prominent arête just north of the bridge that crosses the Kings River at Boyden's Cave. We followed the gully to the east until we could make an easy traverse left to the very edge of the arête. The climb consisted of 350 feet of fourth- and fifth-class rock work along the left side of the arête. Several pitches up, a variation requiring a direct aid step is possible to the right.

Boyden Rock–East Arête

Merle Alley, Mark Powell, and I made the first recorded ascent on June 30, 1954. This route lies on the large peak above Boyden Cave. We followed the Cave trail on around the buttress and bushwhacked high up the arête until we encountered difficult rock. The climbing involved 250 feet of fifth class on the arête, passing left of the Cliff Cave to the summit of the rock. A rappel to the southeast led us to the third-class pinnacles and the stream leading down northwest of the rock to the road.

Kings Tower

Wayne Kincheloe, Richard Sessions, Larry Hawley, Chris Jessen, and I made the first ascent of this small spire on May 16, 1954. Mushrooming from a thin base when viewed from the east, Kings Tower is situated above the road about three miles upriver from the Ten Mile Creek bridge. It is most easily approached from the west up a brush-filled gully to the south notch. From an alcove above the belayer, a difficult layback leads to a secure platform. We then went up the left side of the south face to a thin ledge, traversing the face to the right edge, where the route finished on the east face. A 60-foot rappel brought us to the notch. Piton protection was poor on the hard move below the thin ledge. A short, thick wedge was needed.

GEORGE SESSIONS

YOSEMITE VALLEY

THE SALATHÉ WALL

I believe Yvon Chouinard was the first to call the southwest face of El Capitan the "Salathé Wall," in commemoration of that great pioneer of modern American rock climbing, John Salathé. As we were casually observing the wall in September 1961, Tom Frost and I came to the giddy conclusion that a magnificent route lay there. We accosted Chuck Pratt and were surprised to hear that he had been seriously and quietly thinking of this wall for months. We three immediately agreed to attempt an ascent within a few days.

We planned to make the attempt in two stages. The first would involve a long traverse across the face to the bottom of a large heart-shaped formation, where fixed ropes to the ground would be placed. The second stage would involve the ascent of these fixed ropes, their removal, and an all-out attempt to complete the climb. Since we wished to avoid a siege-type ascent with fixed ropes from bottom to top, this plan —with ropes hanging from the 900-foot level—seemed the best compromise between what was possible and our desire to keep the enterprise as adventurous as we could. By adventurous I mean, essentially, uncertain. It was doubtful whether we would have the strength and determination to climb 2200 feet of unknown vertical rock.

Starting 100 feet left and 100 feet lower than the Great Nose Route, we spent three and a half days completing the traverse to the "Heart" and then descended on fixed lines. Three days later, on September 18, we prusiked up our fixed ropes. We took four of these 150-foot ropes with us and jettisoned the others. We had water and food for six days, although we planned on stretching them for eight if necessary.

As we worked our way up the wall day after day, the climbing was magnificent and the weather cool and clear. On the last two days we had remarkable climbing indeed: a great tension traverse, a 20-foot roof, and a 200-foot overhanging wall. The last pitch on the climb, superbly led by Pratt, was one of the hardest encountered and a fitting climax. We reached the top after dark on the sixth day, nine and one-half days in all. We had placed 484 pitons, 4 of which we were unable to remove. In a 100-foot blank section in the first 500 feet of the climb, we had placed 13 bolts.

The Salathé Wall had been climbed. The next problem was to climb it in one continuous effort without any fixed ropes. In early summer of 1962, Yvon Chouinard and Steve Roper climbed to the base of the Heart in a day and several hours, but a seriously damaged hauling bag forced them to abandon their efforts.

On September 24, 1962, T. M. Herbert, Tom Frost, and I began an attempt. Unseasonable and suffocatingly hot weather, a violent rain storm all night of the second day, and illness sapped our strength and resolution. After climbing 1400 feet, we spent the third day descending and left five liters of water at the 1100-foot level.

The next attempt was made on October 9, 1962. Tom and I were alone this time, and we were successful. In four and a half days we completed the first continuous ascent of Salathé Wall. This was a grand, adventurous, and most rewarding climb. Clouds which each day covered the sky and threatened a storm made the ascent more uncertain and exciting. Every evening as we prepared to bivouac we felt certain a deluge would hit us during the night, but except for a few showers, the weather held off—until the last night when an unusually ferocious storm struck us. The velocity of the wind was amazing; it seemed malignantly bent on tearing us from the ledge. Rain fell steadily; when the wind died down, a moderate but continuous waterfall descended upon us. A little snow fell early in the morning, but as the sun arose, the storm passed, and we finished the climb in the most exhilaratingly fine weather either of us had ever experienced in the Sierra. ROYAL ROBBINS

SENTINEL NORTH WALL—DIRECT ROUTE

The central section of the north face of Sentinel Rock contains numerous vertical fractures but few ledges. These long vertical fractures appear to offer excellent prospects for routes requiring few bolts but do not appear to provide many bivouac spots.

On May 5, 1962, Tom Frost and I began an attempt to establish a route in the center of this face. From slightly below Tree Ledge we moved diagonally left (maximum third class) for several hundred feet to the base of the steep upper wall. Starting at the left side of a large, shallow recess, we nailed straight up to an overhang in the left corner of the recess. This overhang, 350 feet up, is the crux of the climb. Determined to avoid the use of bolts, we spent several hours attempting to pass one 15-foot section of the overhang. A 25-foot fall pulled three pitons, but stronger pins below provided an adequate safeguard. We finally passed this difficulty and bivouacked on a narrow ledge 400 feet up. A line strung between pitons placed on either side of the ledge prevented our dropping off.

Next morning, starting from the left side of our bivouac ledge, we climbed in two pitches to a point 75 feet below a horizontal line of ceilings which blocked our progress. The ceiling farthest right juts down about 20 feet below the others; with Tom leading, we passed over the left side of this protruding block in a difficult and complicated pitch. This brought us to a narrow ledge system running steeply up to the right. After another pitch, with pitons placed in the numerous but rotton cracks, we bivouacked that night at the top of this ledge system. I then descended this 140-foot pitch, leaving the pitons and carabiners in place. This was the eighth pitch; our bivouac was at the 750-foot level.

The third morning we reached a good ledge 200 feet farther up. The tenth pitch, leading up from this ledge, involved novel sixth-class devices such as slings on three horns seven feet apart. We then moved up to the right on a pitch involving the only substantial fifth class on the climb. A fourth-class pitch, number twelve, finished the climb; we reached the summit at 4 P.M., May 7, 1962.

We were on the 1200-foot wall three full days. But it should be noted that the pitons were in place on the first pitch, as I had climbed it alone two days prior to the beginning of our ascent. Our strenuous efforts to avoid bolts were successful, but we did place 203 pitons, including a few large angles. While there were no significant fifth-class problems, the direct-aid climbing was so continuously difficult that it places this climb in a category with the northwest face of Half Dome.

ROYAL ROBBINS

EL CAPITAN TREE

El Capitan Tree is the remarkable full-grown pine growing on the massive southeast face of El Capitan (December, 1952, *SCB*). In December, 1961, Frank Sacherer and I spent several days climbing a new route to the Tree.

The first three pitches up the smooth, improbable looking wall are sixth class with belays in slings. About 200 feet left of the Tree, a dark, slightly overhanging crack curves up from the talus. From the top branch of an oak, we climbed this crack after removing the moss covering it. Above, a thin difficult crack requiring a number of rurp and knifeblade pitons leads right to a line of bolts spaced six feet apart. From the top bolt, an extreme reach left allowed me to reach a tiny flake which would support a sling. Above this, another rurp and knifeblade crack goes directly left, ending at a fine ledge which marks a transition in the climbing. After we placed two large angles for direct aid, the climbing was quite varied and mostly free. Two pitches

led up the left side of a prominent rock pillar, the last going diagonally right to the cool shady ledges beneath the Tree. After relaxing at this unique spot we came down the regular route. On the first ascent we used 70 pitons, including 25 rurps and knife-blades, plus 9 bolts. GLEN DENNY

SENTINEL ROCK—NORTHEAST ARETE

On July 14, 1962, Allen Steck, Les Wilson, and I made the first ascent of this arête. (Ansel Adams' book *Yosemite Valley,* plate 39, contains an excellent photograph of the climb.) From the Glacier Point Four-Mile Trail, a gully just to the left of Sentinel Rock (class 2–3) leads to the base of the arête. After 50 feet of third class, there are two long, moderate fifth-class pitches. The first goes up an easy face and narrow chimney system to a spacious shoulder. The second leads directly up 60 feet to a wide chimney. After a short traverse to the right, past the base of the chimney, there is an exceptionally enjoyable face climb on excellent holds. From a superb belay spot behind a small pinnacle, a shorter moderate fifth-class pitch continues directly up the face to a brush-covered ledge. Another 150 feet of fourth class ends the roped climbing. The summit is second and third class, offering many spectacular and breath-taking views of the north face between the large pillars and gendarmes of the arête. The route can be easily climbed in a day. Retreat is third class down the south notch. AL MACDONALD

THE HINTERLAND

The Oasis is a spring of good water coming out of the rocks at the top of Glacier Point Apron. On September 7, 1962, Bob Kamps and I climbed up the Harding Route on the Apron and traversed left several hundred feet to the Oasis. A mossy traverse left 150 feet brought us to a 40-foot trough terminated by an overhang. Bypassing the overhang on the wall to the left, Bob continued up another 100 feet of difficult climbing to a small ledge. I traversed left 30 feet and down 20 feet to a blank section. Bypassing this section by a 15-foot pendulum, I was able to gain a system of ledges. Bob followed the pendulum via difficult fifth class. While the rope was being pulled through the pendulum piton, we wondered if it would be possible to reclimb the pitch in case of a retreat. Bob continued up another pitch to a large bowl. After a quick snack, I led out of the bowl on the right side a full pitch; Bob continued on another full pitch to a large system of third-class ledges. Diagonally left on these ledges we encountered several fourth-class friction pitches. Above these pitches we continued diagonally right for 700 feet on low angle friction slabs to the base of a 70-foot cliff. After a little searching, we discovered a third-class ledge going across the wall diagonally to the left. Above this, another 200 feet of scrambling brought us to the railing on Glacier Point. JOE MCKEOWN

HOURGLASS

The Hourglass is a 400-foot high, vertical exfoliation slab approximately 100 yards east of Ribbon Falls. The route lies on the left side of the slab. On July 10, 1962, Bob Kamps and I arrived at the base of the climb with much anticipation. If we could negotiate a 20-foot horizontal undercling 30 feet up, we felt our main difficulties would be over. Seven hours, one bolt, and 25 direct-aid pitons later, Bob was at the top of the first pitch. The undercling had required the difficult technique of placing six bong bongs in lengthwise. We used the bolt to protect this section. Above this, a 110-foot jam crack, leading diagonally off to the right, brought us to another ledge. After a difficult face move, Bob entered a tight chimney which widened and

became harder. Above this a short fourth-class pitch brought us to the summit. Placing a bolt, we rappelled down the face and swung into a tree on the right side of the slab. Hanging in slings on this tree, we set up another rappel and were able to reach the ground. The ascent took a day and a half, four pitches, one bolt, and approximately 34 pitons, 23 of which were large angles.

Later in the summer, Bob and Frank Sacherer established a route on the right side of the slab. The first two pitches led up the rappel tree, with a few direct-aid pitons necessary for the 70-foot jam crack below the tree. Several direct-aid bolts leading off from the tree enabled them to enter an overhanging jam crack, which turns into a tight chimney and leads to the summit. JOE MCKEOWN

REAL ERROR

On June 26, 1962, Galen Rowell, Scott Walker, and I established a route 100 yards east of the Worst Error on Elephant Rock. Starting near the base of a large pine tree, the route led up a crack system for three pitches. Traversing left into another crack system, we continued on for two more pitches to the notch of an unnamed pinnacle. Below the notch, we found the cairn placed by Wally Reed, who had rappelled down from the top of Elephant Rock in 1957. Dropping down 200 feet from the cairn, we traversed across the face below the pinnacle and found ourselves back on the climbing route. Three long rappels and we were back on the ground again. The entirely fifth-class climb took a half day and was both challenging and enjoyable.

JOE MCKEOWN

COONYARD PINNACLE

Slightly left and 500 feet above the top of Monday Morning Slab on Glacier Point Apron rises a 40-foot slab. Rock climbers call it Coonyard Pinnacle. On September 7, 1960, Bill Amborn, Rich Calderwood, and I ascended this pinnacle from the top of Monday Morning Slab. Protected by two bolts 15 and 40 feet above, we climbed the first pitch, on extremely difficult friction, to a bush some 60 feet up. We continued diagonally up to the right to a large ledge system which we followed left until it ended. We used a bolt for an 80-foot pendulum traverse to a ledge directly below the pinnacle. Another difficult friction pitch, followed by a system of flakes, led to the base of the pinnacle. We climbed the summit pitch on the right side, using lieback technique. JOE MCKEOWN

THE DIVING BOARD—NORTHWEST FACE

Dick Long, Jim Wilson, and I made the first ascent of the Northwest Face on August 18, 1962. Third- and easy fourth-class pitches lead to a talus field directly beneath the Diving Board. To the right of the impressive blank wall is a wide flat buttress. From the right side of this buttress, a 150-foot fourth-class pitch leads up a chimney past an old vertical piton. This piton was probably used in retreat by some previous party, as we were sure our route had not been climbed past the next two pitches. The chimney itself is unique, being very deep and ending in a squeeze tunnel through to the other side of the immense slab that forms it. Another 100 feet of fourth class leads to a sandy ledge where the difficult climbing begins. We climbed an open book for 60 feet, then stemmed between it and a jam crack on the right for 20 feet more. Here the jam crack turns into a decomposing chimney which we followed 40 feet more to the end of the pitch. About 300 feet of fourth class brought us slightly left to the center of the buttress. We climbed a 25-foot difficult layback up

a right angle open book to a narrow chimney and easy face climbing over rather loose flakes. Another layback pitch leads up 60 feet to a difficult move left beneath an overhang. A bit of fourth-class climbing brought us to the top of a pedestal lying against the headwall.

The next pitch was the most difficult. We traversed up and left 70 feet to an overhanging flake leading 35 feet back to the right. Layback technique, using the underside of the flake for handholds, led to an overhang which we surmounted on adequate holds. A few sixth-class pitons and a short pendulum right ended the pitch on a small manzanita-covered ledge a full 150 feet above the belayer. An easier fifth-class pitch and a few hundred feet of third class finished the climb just right of the Diving Board and below the southwest face of Half Dome. We bivouacked on the summit and enjoyed an excellent view of the firefall. This long and satisfying climb could be done easily in a day with a normal selection of 15 pitons, including a few wide angles.

AL MACDONALD

LOWER CATHEDRAL SPIRE—NORTH FACE

Lower Portion

This interesting route was first climbed by Les Wilson and Wolfgang Heinritz in late June, 1962. They started their climb in a chimney on the right edge of the great slab forming the common north base of the Church Tower and Lower Cathedral Spire. Three pitches up the chimney, a diagonal rappel to the left was necessary to bring them to a more hospitable crack system. They followed this system to a large open area, the "Cow Pasture," near the top of the slab. After a false start up a prominent chimney, they went left and climbed a mossy cliff to an oak tree. From here a difficult sixth-class pitch led to a scramble up a chute and easy fifth-class climbing to the notch between the Church Tower and the Lower Spire. Most of the pitches were mixed fifth- and sixth-class climbing. The first ascent took 1½ days.

Upper Portion

Galen Rowell and I made the first ascent of the upper section on June 9–10, 1962. We ascended the broad talus chute east of the Church Tower to the southeast side of the Spires-Church Tower massif, then followed a gully almost to the notch, where Wilson and Heinritz ended their climb, between the Church Tower and the Lower Spire (class 3–4). Fifty feet from the notch we bore left and climbed a moderate fifth-class pitch ending near the east face of the Lower Spire. By climbing a small arête, we arrived at an alcove at the base of the Spire's northeast corner. One hundred and fifty feet higher, extending out from the north face, there is a large shoulder which we climbed in two pitches. The first, starting 10 feet left of a prominent open book, is difficult fifth class which we eventually followed to two small ledges. The second lead is sixth-class; it begins from a piton placed atop a very loose flake. Fifteen feet higher a difficult tension traverse to the right allowed us to place more direct-aid pitons in a gradually improving crack, from which another tension traverse to the right leads into a chimney and continues to the shoulder. The next pitch starts up the center of a 175-foot sliver of granite we named the Finger. We traversed left and climbed a narrow chimney, then left again and up a succession of long vertical flakes with bushes growing out of them. From a one-foot square belay ledge, we followed a staggered crack system to a narrow ledge at the top of the Finger (bivouac site).

At this point the headwall of the Spire overhangs approximately 20 degrees. We placed eight dubious bolts and one marginal piton in the scaly granite. From the last

bolt we continued up a short squeeze-chimney to a 15-foot overhanging jam crack. Following this, a very difficult mantleshelf on a small ledge with an overhanging wall above allowed us to traverse left and reach a small cave. This section took about nine hours to lead. We left a manila rope over this pitch in case retreat was necessary (not attached at top). From the cave, a few pitons of direct aid led us over loose blocks to a moderate fifth-class face and easy sixth-class overhang. This pitch ends in an open area, from which we reached the summit by a short scramble around the east face. The ascent took two days; we used 54 pitons in 8 pitches of difficult climbing.

AL MACDONALD

NEW CLIMBS ON LOWER YOSEMITE FALL BUTTRESS—WEST SIDE

The Green Strip

On February 3, 1962, Les Wilson and I began the climb at the 450-foot buttress immediately left (west) of the Lower Yosemite Fall Bridge. This buttress is similar to and directly opposite the Waterfall route on Sunnyside Bench. The direct ascent involves four pitches of moderate fifth- and sixth-class climbing with occasional difficult spots. The route follows a line of trees and a prominent open book to a shelf, the continuation of Sunnyside Bench. Highlights vary from direct aid under overhanging slabs on the second pitch to vertical flake climbing on the third pitch. We used approximately 30 pitons on this first ascent.

The Black Wall

On November 17–18, 1961, Glen Denny and I started this first ascent 25 feet to the right of the Green Strip and ascended the black, water-stained wall forming the western side of the Lower Yosemite Fall Basin. The first pitch, a 120-foot climb up a narrow open book (mostly fifth class), leads to a small tree, the only one on the entire wall. A roof 35 feet higher turned on the right (knifeblade pitons required), is the crux of the climb. We used direct-aid climbing up a beautiful piton crack in an open book to a succession of vertical slots (many large angle pitons required) ending on the prominent shelf a short distance from the terminus of the Green Strip route. The climbing was predominantly sixth class, with a short difficult section on the roof pitch. We used approximately 50 pitons.

The Fin

On November 26–27, 1961, Glen Denny and Les Wilson made this first ascent. They began climbing on the south wall about twenty yards to the left (west) of the Green Strip under a prominent overhanging fin. The first pitch proceeded up an open book beneath the overhang, which was overcome by a spoon piton driven straight up into a crack. They continued up an open book forming the left side of the fin to a belay ledge. There they used another direct-aid pitch leading—via a beautiful piton crack—to a small bush prominent on the skyline. Good anchors were placed a few feet to the right. A mixed fifth- and sixth-class pitch then led them to a loose block, followed by a short fifth-class traverse to the right and a scramble to the oak tree at the top of the Green Strip. They used approximately 50 pitons on the ascent.

AL MACDONALD

GLACIER POINT—FLAKE ROUTE

From Glacier Point Terrace, reached by either established route, there is a wide third-class ledge to the west. This leads out of the Terrace onto the face of the cliff overhanging the Brower-Harris route. After several hundred feet the ledge ends

just below a large flake which bulges away from the cliff. Adequate protection is available for the entire party while the lead man gains the top of the flake. We used four bolts to climb the bulge above, which leads to a series of ledges which required a few fifth-class pitons, mainly because of the amount of water coming down them from a spring. Four pitches lead to a grassy amphitheater as large as Glacier Point Terrace, with firewood and water, and ringed by cliffs on all sides except the north (the Valley side) and the east, where the level ground falls off steeply. The most obvious exit route is directly in line with the scar of the firefall. This is the hardest pitch (fifth and sixth class) of the climb and exposes the party for a full 120 feet to missiles hurled by tourists above (our party came in for twenty minutes of this and, despite hardhats, seriously considered spending the night). This pitch—and the climbing—ends on the broad ledge at the base of the firefall. Since parties on this route should anticipate a night out, they may find it useful, as we did, to drop liquids and food from the observation platform to this ledge, using surplus supply parachutes. On June 19, 1962, the first ascent took 15 hours from the Valley floor by way of the Brower-Harris route.

JERRY GRAY

SNOWSTORM CLIMBING

While many climbers enjoy Yosemite Valley only in summer, heavy winter snowstorms produce amazing transitions in the nature of the climbing. Short easy routes in summer may be real adventures under winter storm conditions. In January and February 1962, Warren Harding, Frank Sacherer, Don McGrew, and I found this to be so.

We were surprised to find the south face route on Sunnyside Bench difficult fifth class. On the steep pitch half way up and just below the jam crack, Frank had a hard time standing on icy holds while he swept armloads of snow off the rock to find the route. Above, since friction on a normally third-class slab was out of the question, we used pitons for footholds.

Koko Ledge was absolutely miserable; we needed direct aid on the upper half. We had to take off our warm mittens to manipulate the hardware. This was unfortunate, as I had to dam up a stream of ice water with my hands to see the piton cracks. While I dug out the snow-filled jam crack, three disconcerting sensations diverted my attention from my nearly frozen hands—masses of wet melting snow falling on my head, the waterfall entering my sleeves and escaping from my pants' cuffs, and the cascades of ice rattling down the wall a short distance to the left.

Our best venture was Monday Morning Slab. To the ice and snow plastering the rock completely, the weather added a windy snowstorm and a 30 degree temperature. Each pitch up the right side of the slab was at least fifth class, with crampons and ice axes for chopping steps required all the way. On the summit pitch where a few sixth-class pitons were required, Warren found getting into frozen slings while wearing crampons to be an awkward business. Above this section, the sound of crampon points grating on steep smooth rock underlying a thin veneer of ice marked his progress. On the summit we watched hissing avalanches of fresh snow pour down the face of Glacier Point Apron.

GLEN DENNY

More Books from the Sierra Club

For the convenience of members, the Sierra Club office carries a few books by other publishers which pertain particularly to the club's fields.

A Sand County Almanac, by Aldo Leopold (Oxford, $4). As the author writes in his foreword, "There are two kinds of people; those who can live without wild things and those who cannot. These essays are the experiences and dilemmas of one who cannot."

My Wilderness—The Pacific West, by William O. Douglas (Doubleday, $4.95). Justice Douglas takes us on an intriguing walking trip through magnificent areas of unspoiled beauty from the Sierra to the Olympics.

Mountaineering: The Freedom of the Hills, edited by Harvey Manning (The Mountaineers, $7.50). The hope behind the book is that it will allow students to more quickly and safely become, on whatever level they choose, wilderness mountaineers.

The Singing Wilderness, by Sigurd Olson (Knopf, $5), re-creates the sights and sounds and meaning of the Quetico-Superior country, where the trails are for canoes. Beautifully written, illustrated, and designed.

This Is Dinosaur: Echo Park Country and Its Magic Rivers, edited by Wallace Stegner. (Knopf, $5.) The great controversy over the proposed Echo Park dam has brought wide recognition to Dinosaur National Monument. *This Is Dinosaur* will let you see why there has been furore. The book puts you there, through the ages; it gives the place meaning and perspective.

Birds and Mammals of the Sierra Nevada, by Lowell Sumner and Joseph Dixon ($7.50); *The Incomparable Valley: A Geologic Interpretation of the Yosemite* ($1.95); and *Sequoia National Park: A Geological Album* ($1.95), both by François E. Matthes; *Sunset Sportsman's Atlas: The High Sierra and Its Environs,* maps by C. E. Erickson ($1.75)—all these add greatly to an understanding of the Sierra scene.

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Almost complete set, lacking only Jan., 1913, 1914, 1922, and 1923, it is otherwise complete through 1962. Index, unbound, but with bound 1950 edition of vols. 1–5, $150.

Volumes 1–5 (1893–1905), 1950 edition (offset), in buckram, $32.50.

Fifty-seven-year Index—1893–1949. By George Shochat and Dorothy H. Bradley. Separate listings of contents by volume, authors, reviews, names, and subjects. Paper, $3.75; cloth, $4.50.

Separate issues, 1906–1962, paper, $1.50; cloth (1951–1954), $2.00. Available only in sets: Jan., 1913, 1914, 1921, 1922, 1923, 1937.

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