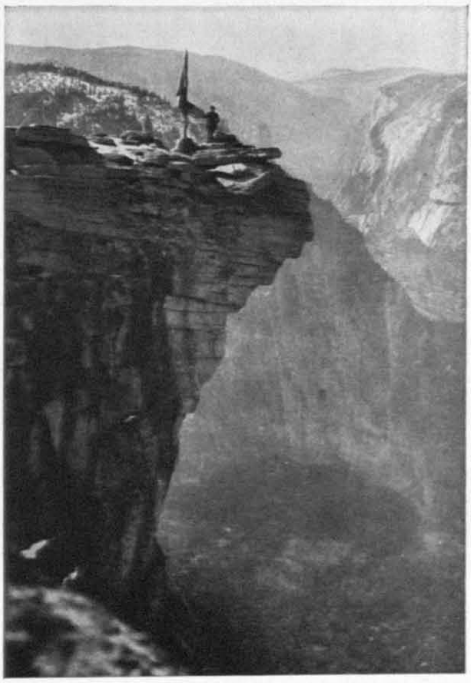
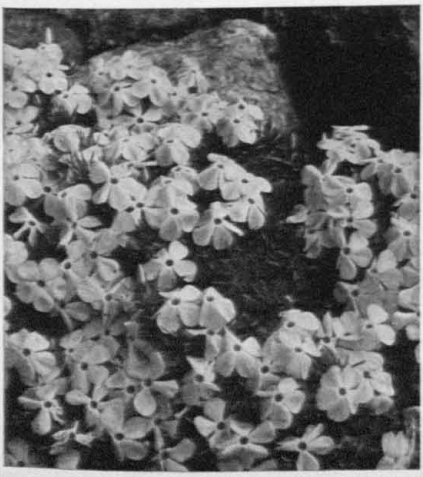
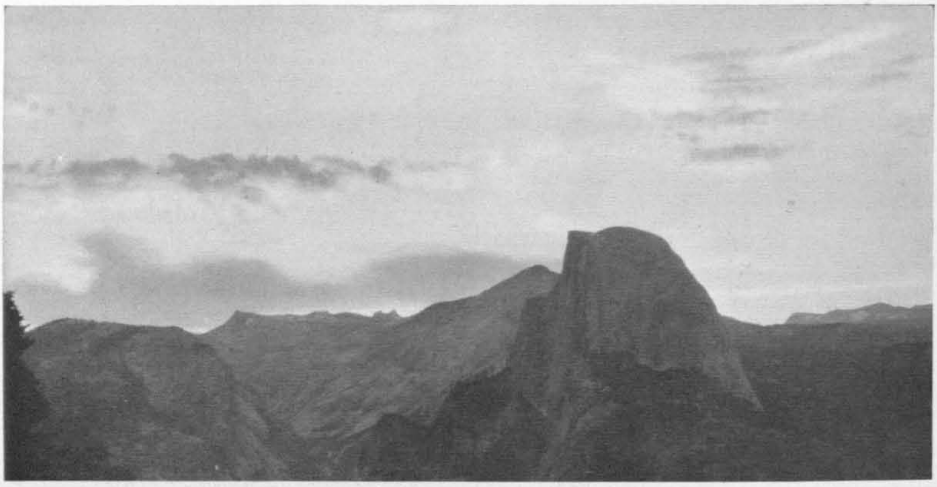
As Merced Cañon forms the southeast branch of Yosemite Valley, so the still deeper cañon of Tenaya Creek is its northeastern arm. Here the glacial story is less plain, and on first sight, from the heights on either side, it might be overlooked. For above the cañon's lower two miles,—that is, beyond the foot of Mt. Watkins,—it crowds to a narrow box-cañon between that great cliff and the steep incline of Clouds Rest. This might seem to be a V-shaped, stream-cut gorge, rather than to have the broader bottom commonly left by a glacier. But a little exploration discovers glacial footprints in the terminal moraines and the lakes and filled lake-beds, with fine connecting waterfalls, that mark a glacier's descent from the Cathedral Peak Range, south of the Tuolumne. We have hardly entered the cañon, indeed, before we are reminded of El Capitan moraine and the enclosed Yosemite Lake. A similar boulder ridge, thrown across the cañon here, is traversed by the road as it carries visitors on their early morning trips to see the sunrise reflections in Mirror Lake. This lakelet evidently occupies the lowermost of the glacial steps. It is a mere reminder of its former size, the delta of Tenaya Creek having stolen a mile from its upper end. Farther up the cañon, below and above Mt. Watkins, stream sediment has already turned similar lakes into meadows. But eight miles east of Yosemite, at the head of the cañon, Tenaya Lake not only presents one of the most fascinating views in the whole Park, but also recalls, in its polished granite pavements, walls and domes, a very different scene,—a picture of the old Tuolumne glacier, split against the east front



Overhang at Summit of the Half Dome, nearly a mile above the Valley floor and Tenaya Cañon. El Capitan is seen in the distance.



Phlox (P. douglasii), on the Glacier Point Trail.



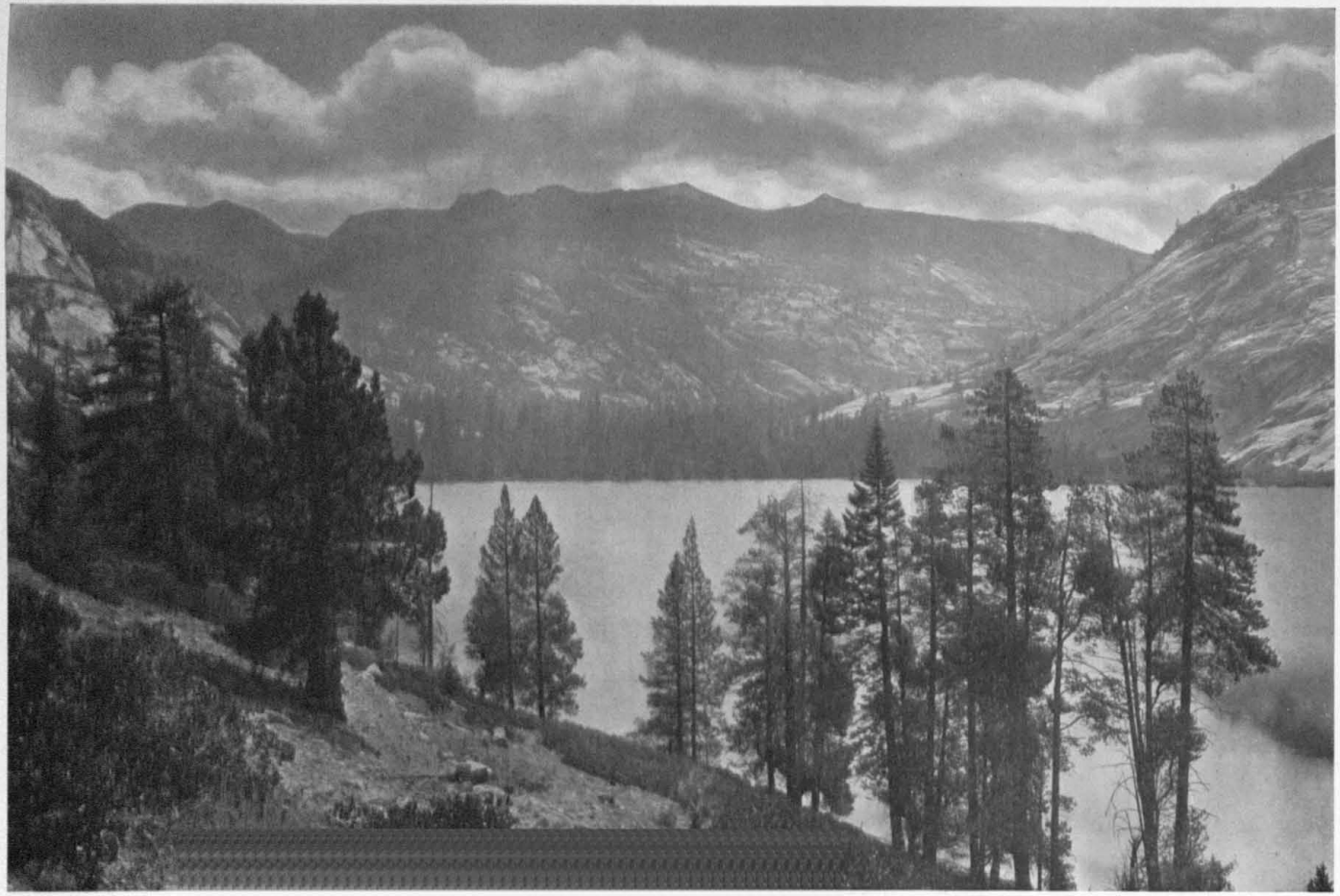
Half Dome at Sunrise, seen from Glacier Point.

of Mt. Hoffman, and sending part of its immense ice-stream over the low divide into Tenaya basin, to form the main ice supply of Tenaya glacier, and the rest down Tuolumne Cañon to Hetch Hetchy.

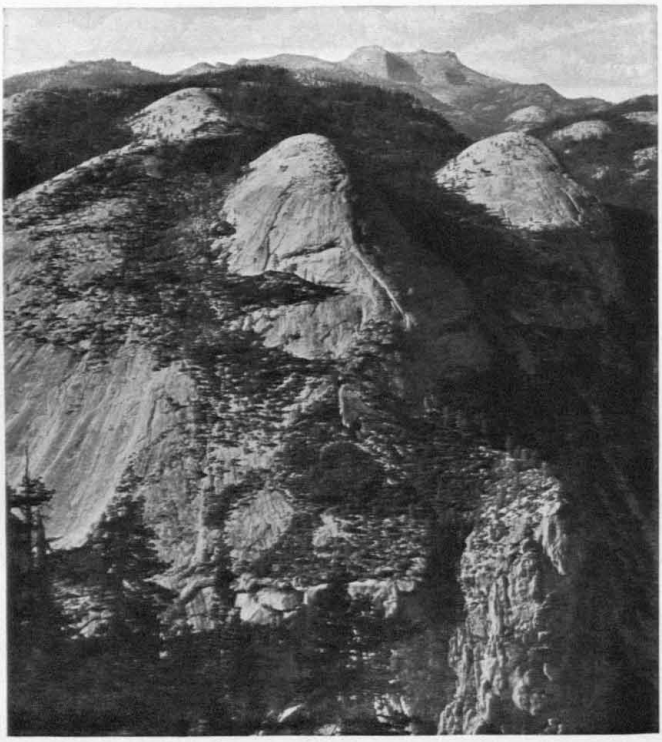
Thus Tenaya Cañon forms no exception. Its narrowness between Clouds Rest and Mt. Watkins, well shown in Prof. Le Conte's pictures on page 49, is seen to be due to the solidity of the huge inclined strata of the former, and the fact that the latter is a single block of massive granite, rising as high, as sheer and as unbroken as El Capitan, which it greatly resembles. The striking contrast which Tenaya Cañon thus presents to Yosemite Valley is lucidly set forth by Mr. Matthes, the well-known expert of the Geological Survey:

On the "Short Trail" to Glacier Point. This trail commands splendid views of Sentinel Rock, Yosemite Falls and the Valley floor.

> The Yosemite Valley evidently was carved from prevailingly fissured materials in which the ice was able to quarry to great depth and width. Tenaya Cañon, on the other hand, was laid along a rather narrow zone of fissuring, flanked by close-set, solid masses; and the glacier that flowed through it, while permitted to carve deeply—more deeply even than the mightier Yosemite glacier,—was impeded in its lateral excavating, and has been able to produce only a narrow, gorge-like trough. — *Sketch of Yosemite National Park.*



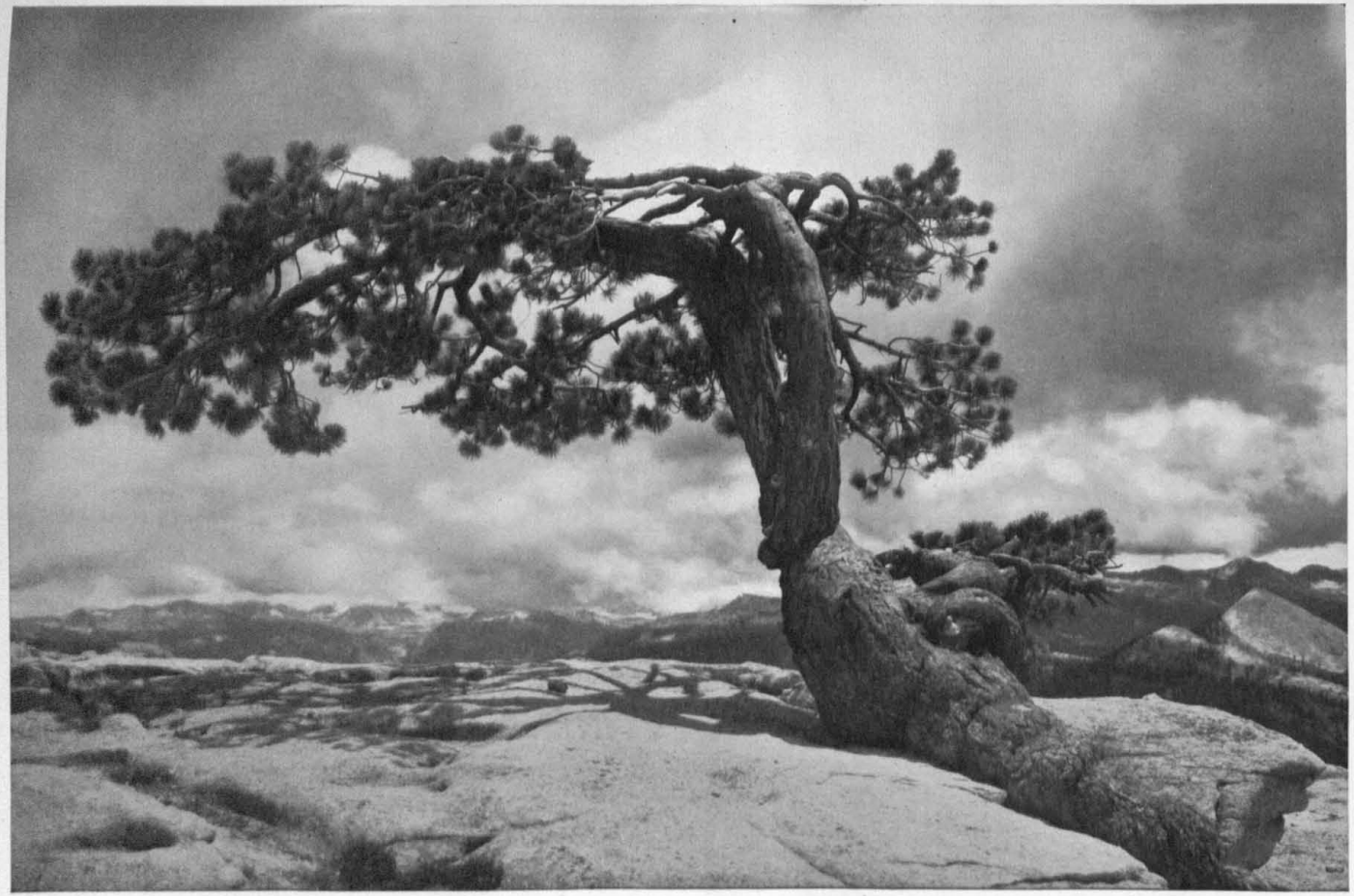
Lake Merced, one mile above Upper Merced Cañon, four miles above Little Yosemite.



A Characteristic Dome Landscape; view north from Glacier Point, looking across Yosemite Valley to North Dome, Basket Dome, and Mt. Hoffman. In the foreground, note the deep fissure separating Washington Column from the Royal Arches.

Yosemite offers many other convincing particulars of the life of its great valley glacier. The beauty of its cliffs is no more obvious than is their testimony regarding their origin, outline and sculpturing. Their perpendicular fronts and projecting angles, narrowing the valley here, or overtowering its deeper recesses there, tell unmistakably of the glacier's work as a giant sapper and miner. But that work was made possible by the extreme mingling of zones of jointed and unjointed granites. It was carried on first by the ice, and later by all the agencies of weathering,—water, frost and snow. Where the valley contracts, we find unfissured masses that resisted the stresses of the cooling earth, and in the glacial age were able equally to withstand the action of ice. Here El Capitan and Cathedral Rocks, rising opposite each other at the valley's narrowest part, were undivided blocks too vast for the glacier to remove. So Yosemite Point confronts Union Point, and

Sentinel Dome, on the plateau above Yosemite Valley, south of Sentinel Rock. On the summit is seen the lone Jeffrey Pine which is shown at large on the opposite page.



Jeffrey Pine on Sentinel Dome. Such outposts of the forest are found on nearly all the bare granite bosses that stud the Yosemite uplands. Starting in life where no life would seem possible, they bore down into the cleavage joints, and draw moisture from the rock itself. Above, they grow slowly, turning their few stocky limbs eastward with the prevailing winds. The heroic tree shown here is doubtless several hundred years old, though hardly more than twenty feet high.

Aspen Forest at Lake Merced. The finest grove of Aspens in California. The large trunk at the right shows scratches from the claws of mountain lions, which delight in climbing these trees. The Aspen (Populus tremuloides) is the most widely distributed of American trees, ranging from the Arctic Circle to Mexico; and with the Black Willow (Salix nigra) it monopolizes the distinction of being common to both the Atlantic and the Pacific Coast.

the splendid prow of Glacier Point the projecting pedestal of the Half Dome. In the areas of abundantly fissured rock separating each of these pairs of opposing cliffs from the next, the glacier took advantage of the vertical and horizontal jointing to undermine and cut back the valley walls. Their varying cleavage planes, with the occurrence of smaller unjointed masses, were set out in an infinite variety of gables, pinnacles and spires. Where the jointing was vertical, the ice left the sheer faces of Glacier and Yosemite Points and the Sentinel. Where it inclined, the Three Brothers, with their sloping steps, resulted. A succession of fissured and massive granites gave us the deeply trenched Cathedral Rocks. Purely local solidity surrounded by a fissile structure is represented in Cathedral Spires and the Lost Arrow, as well as in such clefts as The Fissures and the gap separating Washington Column from the Royal Arches. Much of this detailed sculpture, of course, has been the result of weathering since the retreat of the glacier. To that agency must also be ascribed the splitting off of flat plates from the front of Half Dome, as well as the exfoliation of concentric layers from the top of that and other domes, which, rather than any glacial grinding, is responsible for their rounded form.

Half Dome, the Indian Tis-sa-ack, dominates the upper end of the valley even more finely than El Capitan, Tu-tock-ah-nu-lah, commands the lower. These superb cliffs, perhaps the noblest rocks in the world, withstood the ice as they now endure the storms. Serene and distinguished, they express Yosemite's majesty. "The Colorado Grand Cañon," writes John Burroughs, "is more unearthly, apochryphal; but one could live with Yosemite."

Triple Divide Peak (11,613 ft.), seen from meadows at the foot of Foerster Peak. So called because its snow-fields feed the San Joaquin and two forks of Merced River.

III.

ON THE CALIFORNIA SKY-LINE

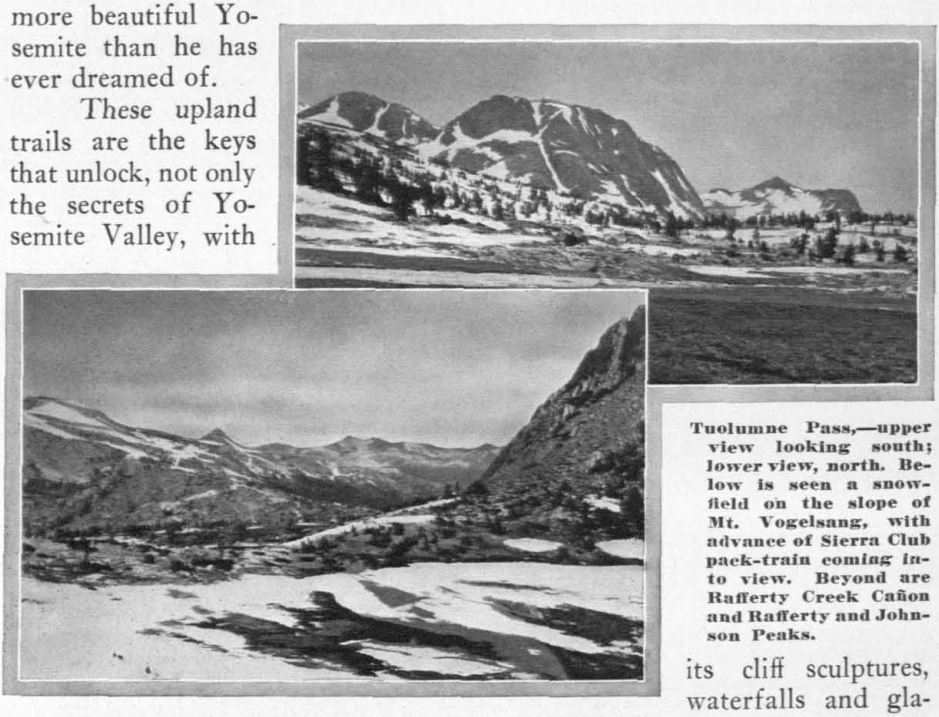
I ramble to the summit of Mt. Hoffman, eleven thousand feet high, the highest point in life's journey my feet have yet touched. And what glorious landscapes are about me, new plants, new animals, new crystals, and multitudes of new mountains, far higher than Hoffman, towering in glorious array along the axis of the range, serene, majestic, snow-laden, sun-drenched, vast domes and ridges shining below them, forests, lakes, and meadows in the hollows, the pure blue bell-flower sky brooding them all,—a glory day of admission into a new realm of wonders as if Nature had wooingly whispered, "Come higher."—*John Muir: "My First Summer in the Sierra."*

THE best way to see Yosemite is from the heights. The wonder and pleasure of this experience draws thousands of visitors each summer to Yosemite Point, overlooking Yosemite Falls, and thence to the still higher elevations of El Capitan, Three Brothers (Eagle Peak) and the North Dome; or, on the south side, to Glacier Point, Sentinel Dome and the great outlooks offered by the Long trail and Pohono trail. These comparatively easy ascents should be made on foot by everybody who commands good wind and a fair pair of legs. Others are advised to take horses. It is not well to underestimate either the labor required or the rewards to be obtained. As one rises from the valley, the view develops unexpected surprises; the opposite cliffs rise

Climbing Mt. Clark.

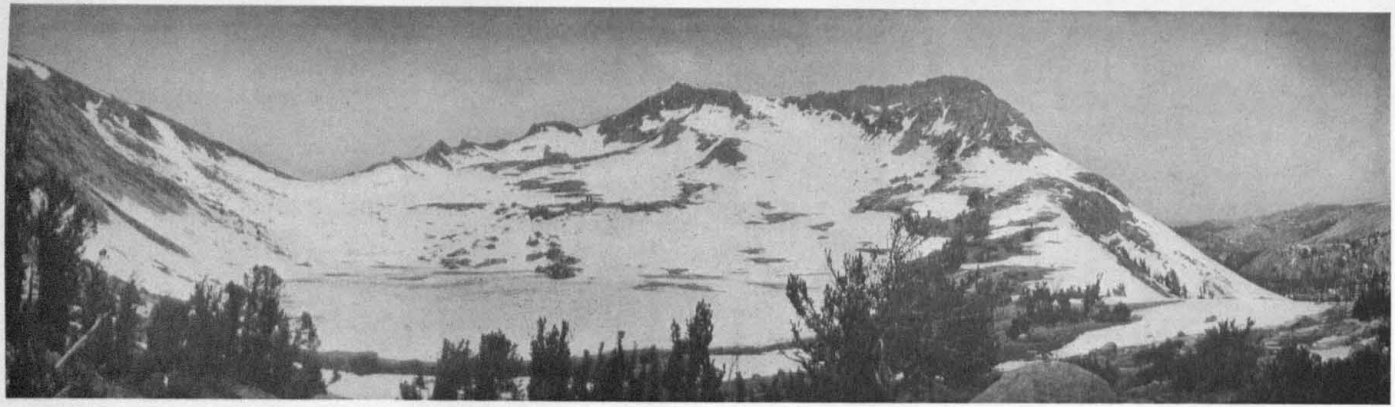
with him; new rock forms are discovered, colossal and unique; near-by proportions and distant perspective alike change with increasing altitude; until, at last, from the summits he beholds at his feet a vaster and more beautiful Yosemite than he has ever dreamed of.

These upland trails are the keys that unlock, not only the secrets of Yosemite Valley, with its cliff sculptures, waterfalls and glacial story, but also the greater mysteries of the higher mountains. No one can climb the valley walls, under the clear Sierran sky, and behold the panorama which they unfold of the far-away California sky-line, without hearing the call of those snowy peaks and sunny ranges rising in the east. Splendid views of the High Sierra may be had from Glacier Point or North Dome, and still grander ones from Clouds Rest, east of Half Dome and easily reached by trail from Nevada Fall,—the highest point on the rim of the valley. But distant views are a poor substitute for the real enjoyment of days and nights spent among the lofty passes and fascinating alpine meadows nearer the backbone of the range, with such ascents as may be within



Tuolumne Pass,—upper view looking south; lower view, north. Below is seen a snowfield on the slope of Mt. Vogelsang, with advance of Sierra Club pack-train coming into view. Beyond are Rafferty Creek Cañon and Rafferty and Johnson Peaks.

On Lake Washburn at Sunset.

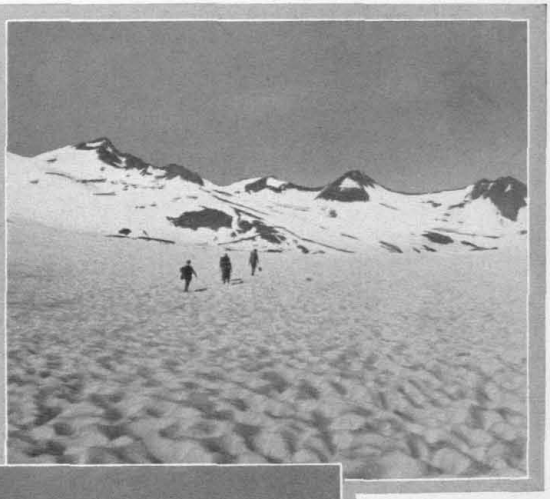


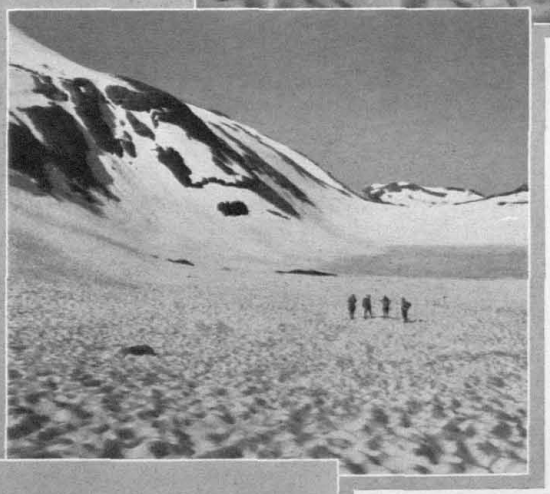
Vogelsang Pass (left) and Vogelsang Peak (11,511 ft.). In the foreground is Vogelsang Lake (frozen), and on the right Fletcher Creek Cañon. This view looks south from Tuolumne Pass.

View South from Vogelsang Pass, looking down the McClure Fork of the Merced to Mt. Clark and the Merced Range.

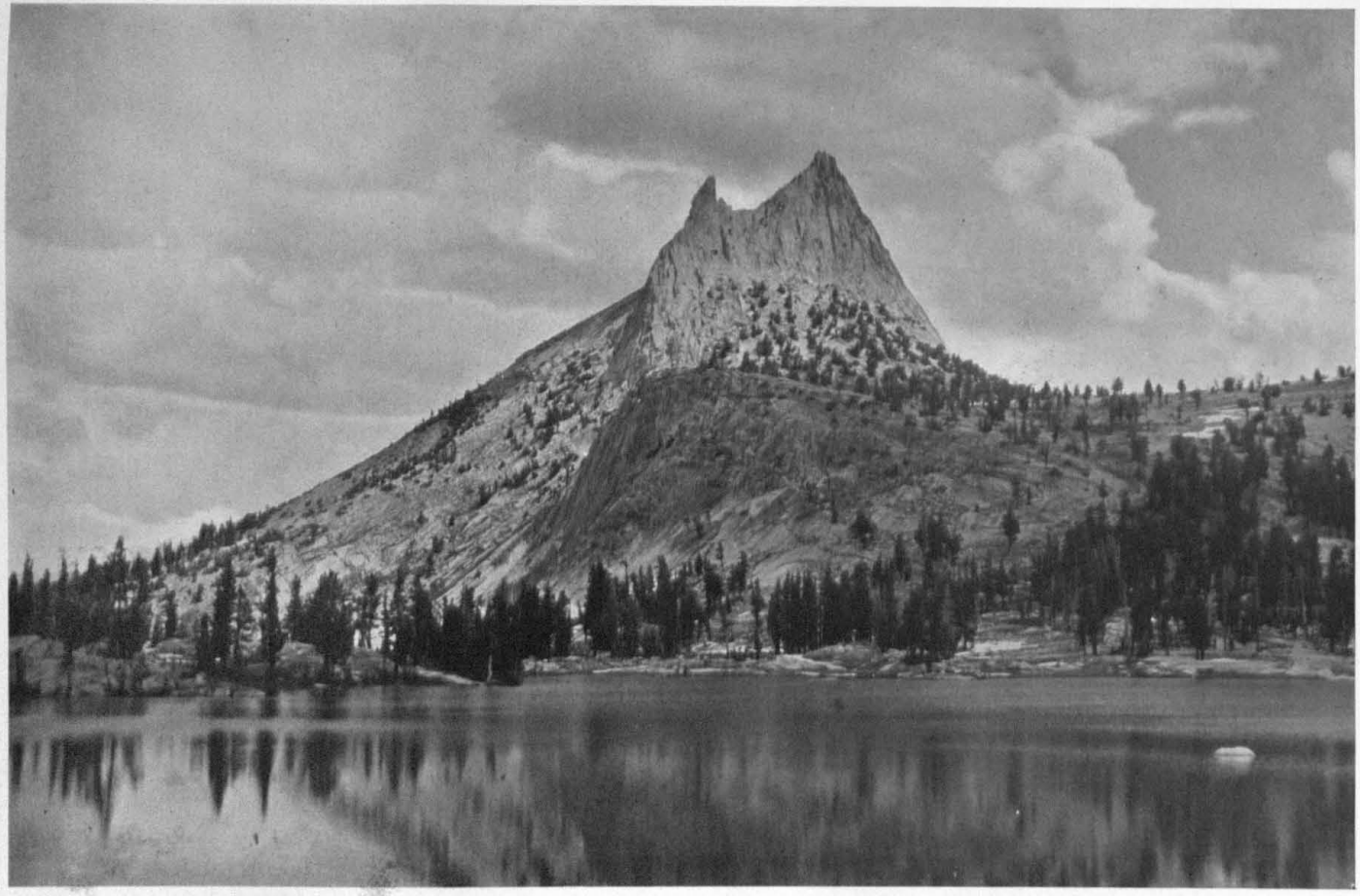
one's time and inclination. Hence the most important thing about the trails out of the valley is that they invite one on and on, to the grander Yosemite of the far heights.

Visiting the Yosemite Sierra has till recently meant real exploration, but with the good trails now opened to many parts of the Park, one can hardly go anywhere below timber line without finding sign-boards pointing him to lake or peak or valley. All this is in disregard of the professional climber's fear that his favorite wilds will be rushed by the "mob." The Park administration wisely aims to make this great national playground fully accessible to the general public, as well as to the mountain enthusiast. The "mob," of course, will not follow; but mountain par-

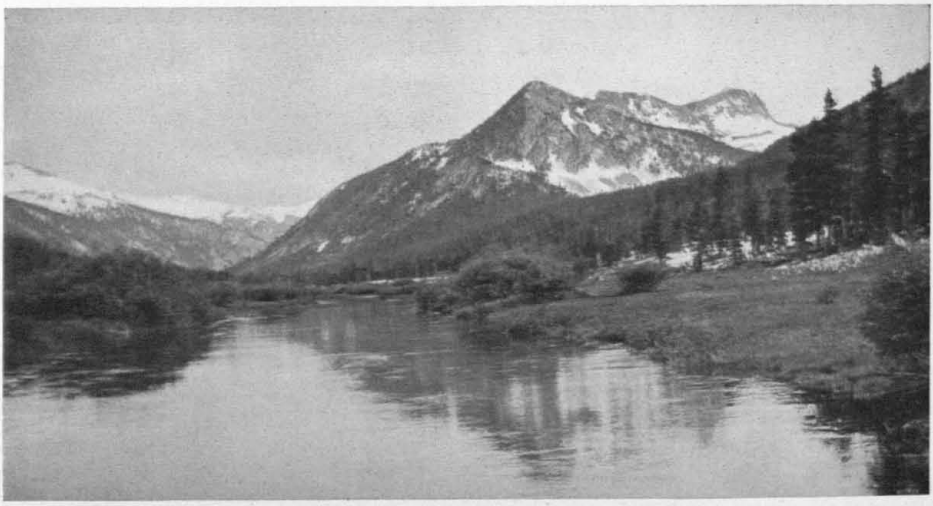




Summer Snowfields in the Sierra. Upper picture shows party entering Park via Donohue Pass and east shoulder of Lyell. Middle, a view south, near Foerster Pass, across frozen Lake Harriet. Lower, coasting on snow slope near Foerster Pass, with Merced Cañon and Mt. Clark in distance beyond.

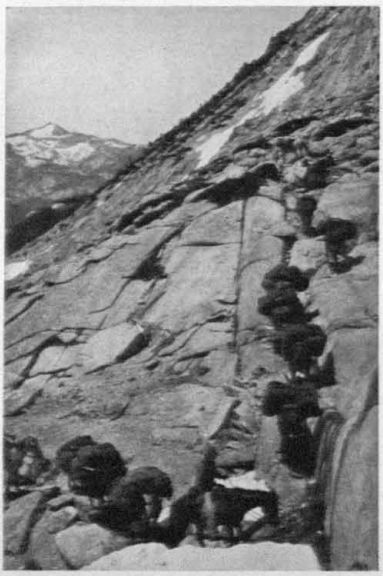


Cathedral Peak (10,933 ft.), from unnamed lake at its foot, on the northwest side, at summit of Cathedral Pass.



Looking up Lyell Fork of the Tuolumne, with Kuna Crest on the extreme left, Potter Point in the center, and Parsons Peak at the end of the ridge beyond.

ties become larger and more numerous every year, and with the establishment of the Sierra Club's lodge and camp at Soda Springs next summer, and the chalets which the government is about to erect at Lake Merced, Tuolumne Meadows and some of the intervening passes, the number of such companies taking the long trails will, happily, soon be multiplied.



Pack Train at Vogelsang Pass. Mt. Clark is seen in the distance.

There is variety enough in the mountain trails and the districts to which they lead to fill many summers with enjoyment. No season would be long enough to cover all the trails at anything less than a sprinter's gait. Hence it is best to undertake some definite section of the Park, knowing that unforeseen calls are likely to be made on one's interest and time.

Except the old Tioga road, all highways entering the Park lead to Yosemite Village, and end there; travel to the uplands, save for persons relying upon their knapsacks, must be by the horse-trails. The Tioga road is not really an exception. Built many years ago on easy grades to reach the Tioga Mine, it follows up the Merced-Tuolumne divide, and crosses Tioga Pass. East of the Park, it is maintained as a state road; but the western end, long unused and now impassable for vehicles, is simply a

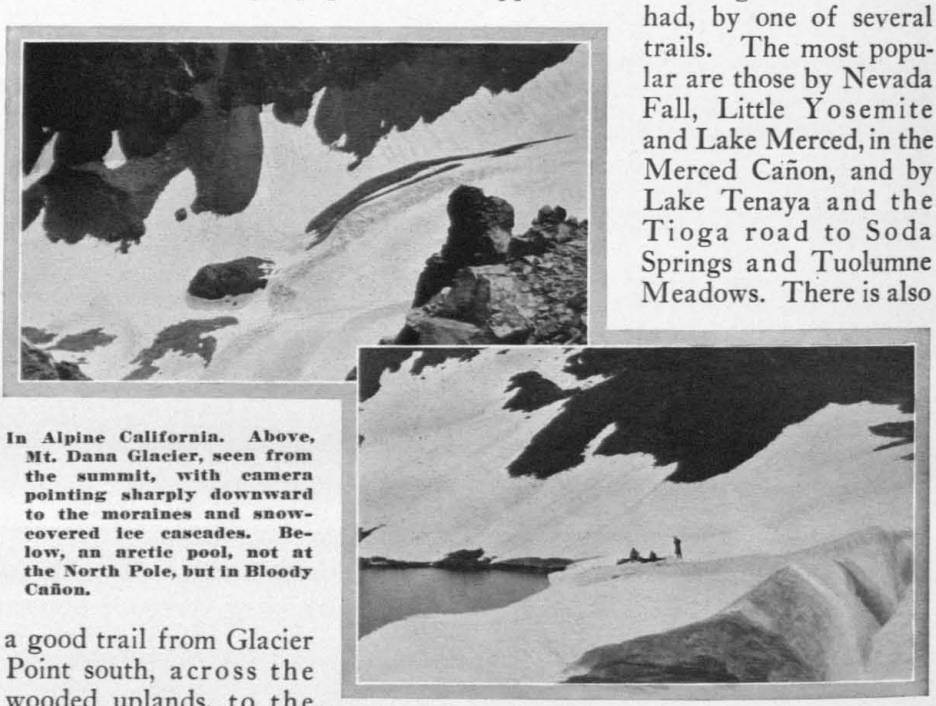
Kuna Crest, seen from meadows near Mono Pass.

well-marked, though very rocky, trail through the central zone of the Park to Tenaya Lake and Tuolumne Meadows. It is necessarily traversed in part by those who go north from the valley, whether to the upper Tuolumne or to Hetch Hetchy.

This road could be put in good shape, and connected by a branch road from Aspen Valley with the Big Oak Flat road, at comparatively small cost. When this is done, we shall have a practicable highway, as nearly direct as is now possible, from Yosemite to Tenaya Lake and the Tuolumne country, and forming part of a transcontinental automobile highway. Such a road would be very much used. Next to more hotels, it is the greatest present need of the Park. The government project of a road from Yosemite to Nevada Fall and Little Yosemite, and thence across one of the passes east of Clouds Rest, promises in time to give the Park a magnificent highway by the upper Merced to Soda Springs. But it will probably cost four or five times as much as the other, and, in view of Congressional indifference to "mere scenery," is not likely to be built within a decade.

Mountain Hemlocks (Tsuga mertensiana) on east slope of Matterhorn Cañon, where there is a remarkable forest of this most graceful of alpine trees.

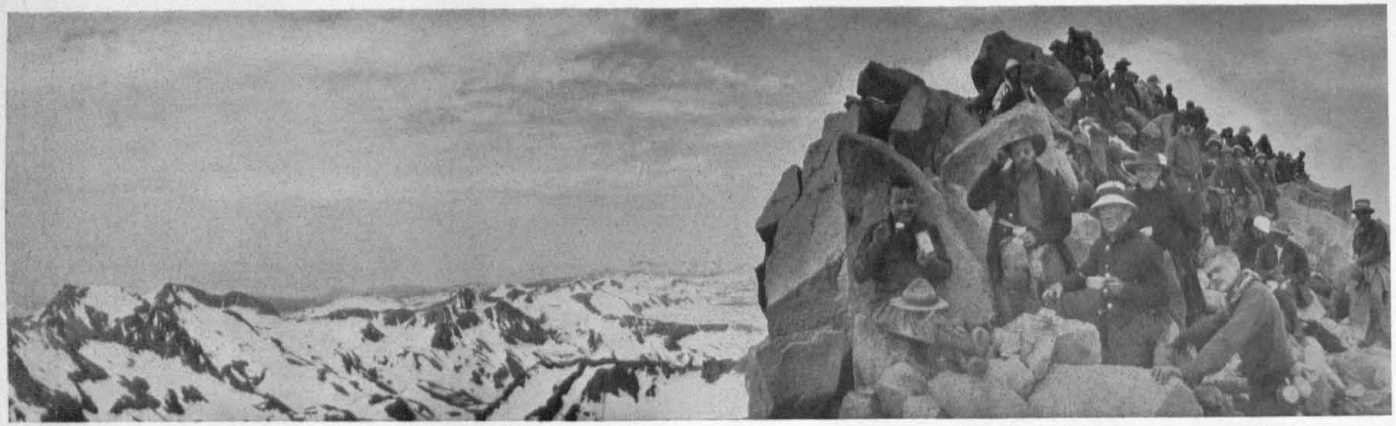
Outing parties visiting the High Sierra may now leave Yosemite Village, where camp equipment and supplies, horses and guides are to be had, by one of several trails. The most popular are those by Nevada Fall, Little Yosemite and Lake Merced, in the Merced Cañon, and by Lake Tenaya and the Tioga road to Soda Springs and Tuolumne Meadows. There is also a good trail from Glacier Point south, across the wooded uplands, to the lake country north of Wawona; and, on the north side, a new route continuing the Yosemite Falls trail has been opened to Hetch Hetchy.



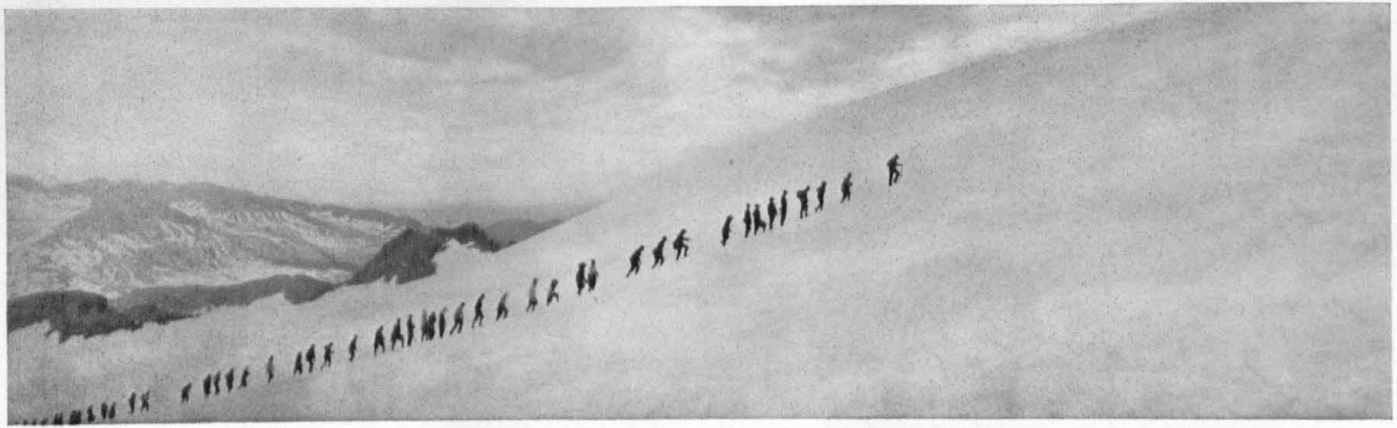
In Alpine California. Above, Mt. Dana Glacier, seen from the summit, with camera pointing sharply downward to the moraines and snow-covered ice cascades. Below, an arctic pool, not at the North Pole, but in Bloody Cañon.

The Merced route, besides its branch trails to Clouds Rest, Mt. Clark and the Illilouette head-basin, connects with other well-blazed trails crossing the divide to the Tuolumne through Cathedral and Tuolumne Passes; and also offers access to the entire upper watershed of the Merced River. In this basin, the Merced's branches flow down from cirques and snowfields which form a great horse-shoe stretching from the Merced Range and Triple Divide Peak, on the south, along the crest of the Sierra to the Cathedral Peak Range. Its principal peaks, reaching elevations of twelve and thirteen thousand feet, are Long, Foerster, Electra, Rodgers, Lyell, McClure, Florence, Parsons, and Vogelsang,—a splendid line of snow-fountains, forming a vast amphitheater laced with cañons, and ridged by great moraines of the old Merced glacier. In this wild region, Mr. Muir counted sixty-seven glacier lakes, not

Cutting Steps up the Snow-Finger on Mt. Lyell.



Luncheon on the Lee Side of Lyell Summit. View looking across North Fork of the San Joaquin.

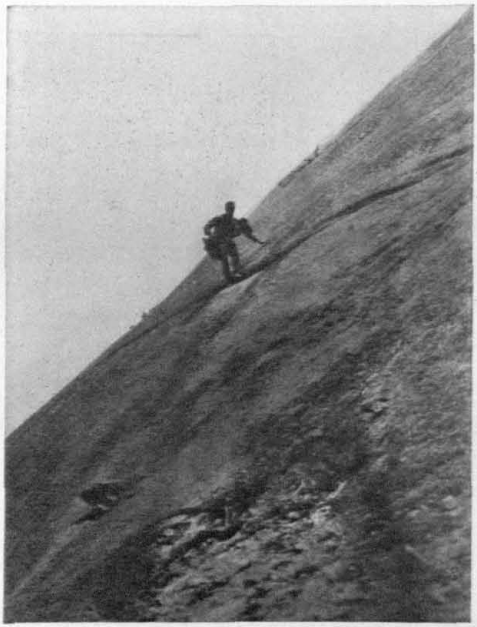


Sierra Club Climbing the North Slope of Mt. Lyell. Donohue Pass is seen below on the left, leading down to the Rush Creek country.

Rodgers, Electra and Davis Peaks, seen from near Island Pass.

to mention scores of others across in the Illilouette basin and on the south side of the Park, in the watershed of the Merced's South Fork.

This whole southeastern section is a favorite haunt of sportsmen, since its lakes and streams are abundantly stocked with trout,—as, indeed, are the waters of the entire Park. Many thousands of young trout have been successfully planted in nearly every stream and larger lake, up to nine or ten thousand feet. Nowhere in America is there better fishing.



A Convenient Crack. Such chance fissures frequently offer the only possible trails across the glacier-polished granite slopes.

Down in Yosemite Valley, the Merced shelters many an educated trout that exhibits only indifference to the lures of the fly-book. But back in the streams and lakes of the higher altitudes, as well as in the less fished waters of Hetch Hetchy, during July and August, even a novice may fill his creel with glittering beauties. The native Rainbow trout (*Salmo irideus*) is widespread in the Sierra. The Eastern Brook trout (*Salvelinus fontinalis*), introduced here from the hatchery near Wawona, has multiplied extensively on the upper Merced, especially in

Summit of Mt. Lyell (13,090 ft.). **Made in the mountain spring (July), this picture shows the fine north-side glacier still too deeply covered with snow to disclose its characteristic crevasses.**

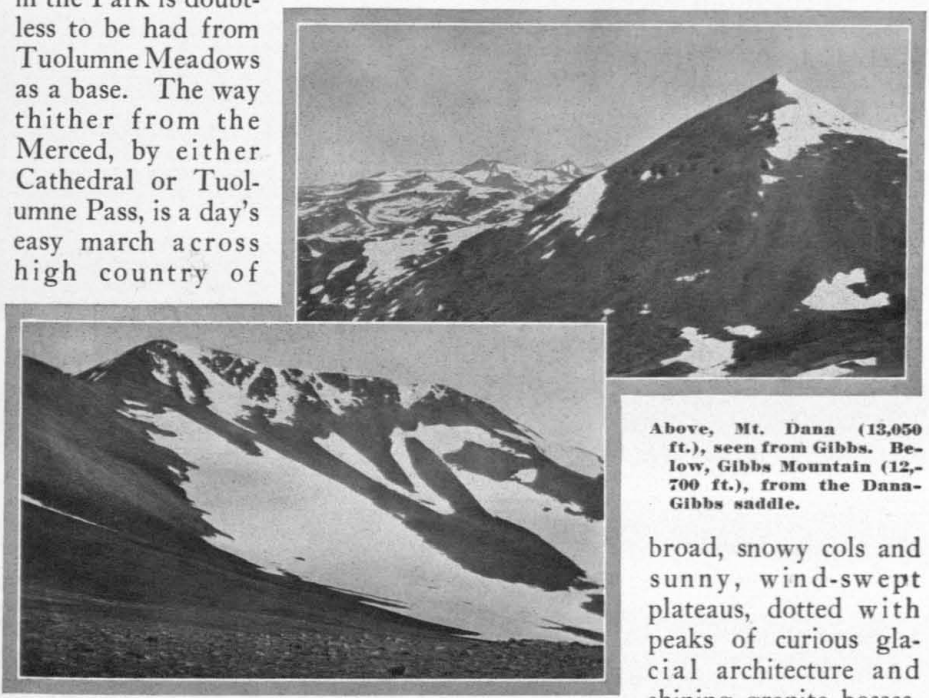
The "Bergschrund" of Lyell Glacier. This German word ("mountain rift") is applied to the great crevasse stretching across the head of every active glacier at the point where its motion begins, and the ice-stream pulls away from the summit snowfield. *To the* weathering of the slope exposed in such crevasses, through daily thawing and freezing in summer, is chiefly due the head-wall cutting that digs the "cirque" or glacial head-basin far back into the heart of the mountain, and opens passes through the range. This is now recognized as the prime factor in the sculpturing of high mountain districts. The upper rim of a bergschrund often overhangs, as here, in a "snow-cornice."

Merced and Washburn Lakes, and also in the Tuolumne basin. A few Tahoe trout (*Salmo mykiss henshawi*) are also to be taken in the Merced, and an occasional Loch Levin, or hybrids of it with native species, rewards the angler. On the other hand, the wonderfully brilliant and gamy Golden trout of high altitudes in the Mt. Whitney region is not found here. It is to be caught only in the lakes and streams of the southern Sierra, notably in the Cottonwood Lakes, where it is known scientifically as *Salmo agua-bonita,* and in Volcanic Creek (*Salmo roosevelti*).

The Uplands in July. View of Echo Peak from Unicorn Peak, with Mt. Hoffman in the distance.

For those who mix mountain climbing with their fishing, or *vice versa,*

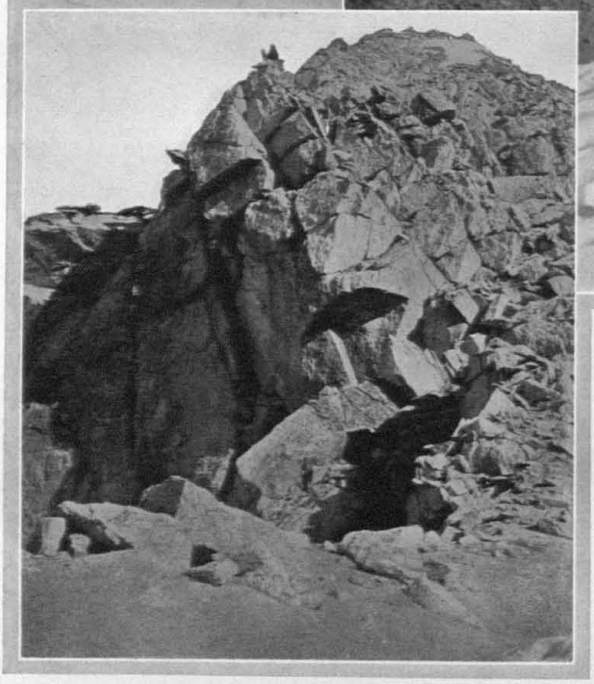
the snow-peaks that sentinel the Merced amphitheater offer fascinating ascents; and the climber is rewarded with far-reaching views, both of that watershed and of the upper San Joaquin. But the best mountain climbing in the Park is doubtless to be had from Tuolumne Meadows as a base. The way thither from the Merced, by either Cathedral or Tuolumne Pass, is a day's easy march across high country of broad, snowy cols and sunny, wind-swept plateaus, dotted with peaks of curious glacial architecture and shining granite bosses, all burnished by the recent ice. It is country of immense interest, because it is astonishingly new,—so new, indeed, that the rapid disintegration common to altitudes of nine and ten thousand feet under daily interchange of

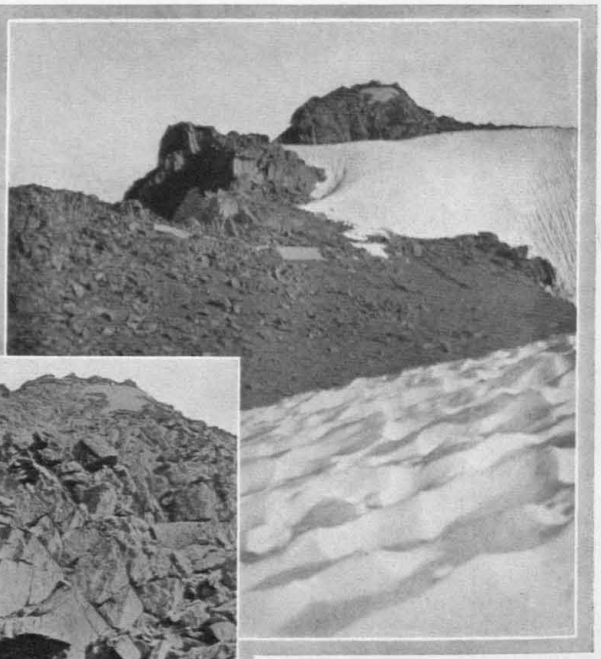


Above, Mt. Dana (13,050 ft.), seen from Gibbs. Below, Gibbs Mountain (12,700 ft.), from the Dana-Gibbs saddle.

The Craters of Mono County. This unique volcanic range, which lies in the desert of Eastern California, below Mono Pass, rises 2,500 feet above the near-by Mono Lake. The picture is a winter view from Pumice Valley.

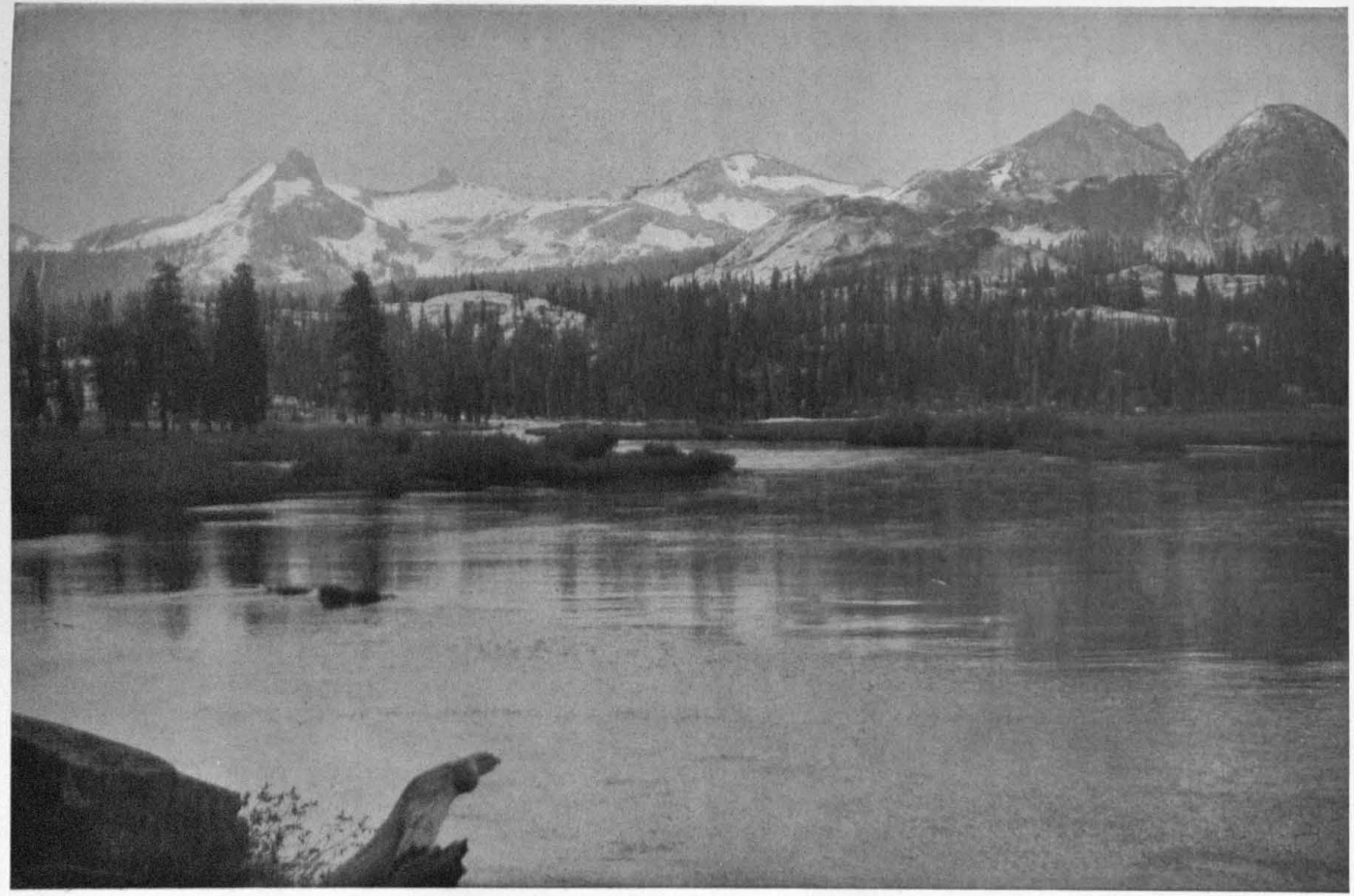
sun and frost has not yet tarnished the landscape. Glacier-polished slopes and benches are common enough on the uplands adjacent to Yosemite and Hetch Hetchy. Here, on the edge of the snowfields, they are everywhere; but hundreds, perhaps thousands, of years younger. How hard it is to take Nature's word for it, that this land of sunshine and gentlest mountain airs, with joyous flowers in every hollow that holds a spoonful of soil, was yesterday a sea of sullen ice!



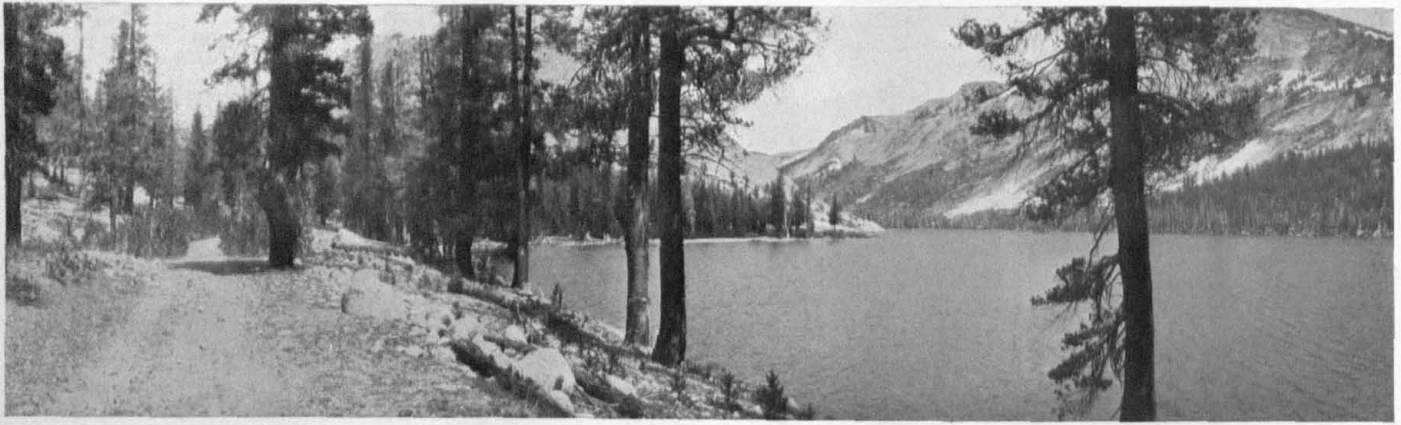


Summit of Mt. Conness (12,556 ft.). The cliff shown below is the top of a 2,000-foot wall, part of the rim of an ancient glacial cirque.

Yosemite visitors who have the time will find a trip to Soda Springs from the Merced, across one of the high passes, as fine an experience as the Park can give. But the Tuolumne may be reached more directly from the valley, either by the Yosemite Point trail or by the new Snow-Creek trail out of Tenaya Cañon. Each of these trails soon brings one to the Tioga road, which he follows to Tenaya Lake, and thence northward past Mt. Hoffman and Fairview Dome. This is the region traversed by the south branch of the Tuolumne glacier, on its way to Tenaya Cañon and Yosemite. The cleanness of the country is amazing, and we realize how the mighty ice-stream stripped the whole region bare of its overlying sedimentary rock, and left only the hardest granites.



Cathedral Peak Range, seen from the Tuolumne Meadows. View from junction of the Dana and Lyell Forks of Tuolumne River, showing Fairview Dome on extreme right, with Cathedral Peak beyond. Unicorn Peak is the high mountain on the left.



Tenaya Lake, seen from the old Tioga Road, built many years ago across the Sierra by the owners of the once famous Tioga Mine. East of Tioga Pass this road is maintained by California as a State highway, but west of the summit it is still privately owned, though now within the National Park. This portion has long been unused, but there is a growing demand that it be purchased by the Government and improved.

Lambert Dome and Tuolumne Meadows, with Mt. Dana in the distance. The easy slope on the east or up-stream side of this and other domes, with their sheer west faces, indicates the direction in which the ancient Tuolumne Glacier flowed. Fairview Dome, south of the Meadows, shows a similar incline.

Matterhorn Cañon, seen from its east slope. Matterhorn Peak (12,272 ft.), is on the sky-line at right, and the Saw-Tooth Range in the distance on left of center.

The trails radiating from Tuolumne Meadows bring a score of important peaks, with their glaciers and snowfields, within easy reach of the climber. The story of actual ascents must be left to our illustrations showing some of the adventures of California's great Sierra Club.

Of all high mountain scenes, the glacial head-basins are the most interesting. For they hold the secret of the glacier's method. The fundamental importance of such cirques as makers of mountain landscape was not recognized, even by leading geologists, till the last decade. Much less was it understood that the tool with which the work is done is the "bergschrund," or crevasse across the head of every living glacier, separating the moving ice from the snowfield above (See page 104). That the bergschrund, through its exposure of the head-wall to daily thawing and drenching, and to nightly freezing, plucks huge rocks from the mountain, and so drives the cirque deeper and farther back, till great peaks are undermined and overthrown, and broad passes are cut where two glaciers head together, — this world-old romance of the silent, icy heights is one of the newest nature-stories told by

The Hammond Fly-Catcher.

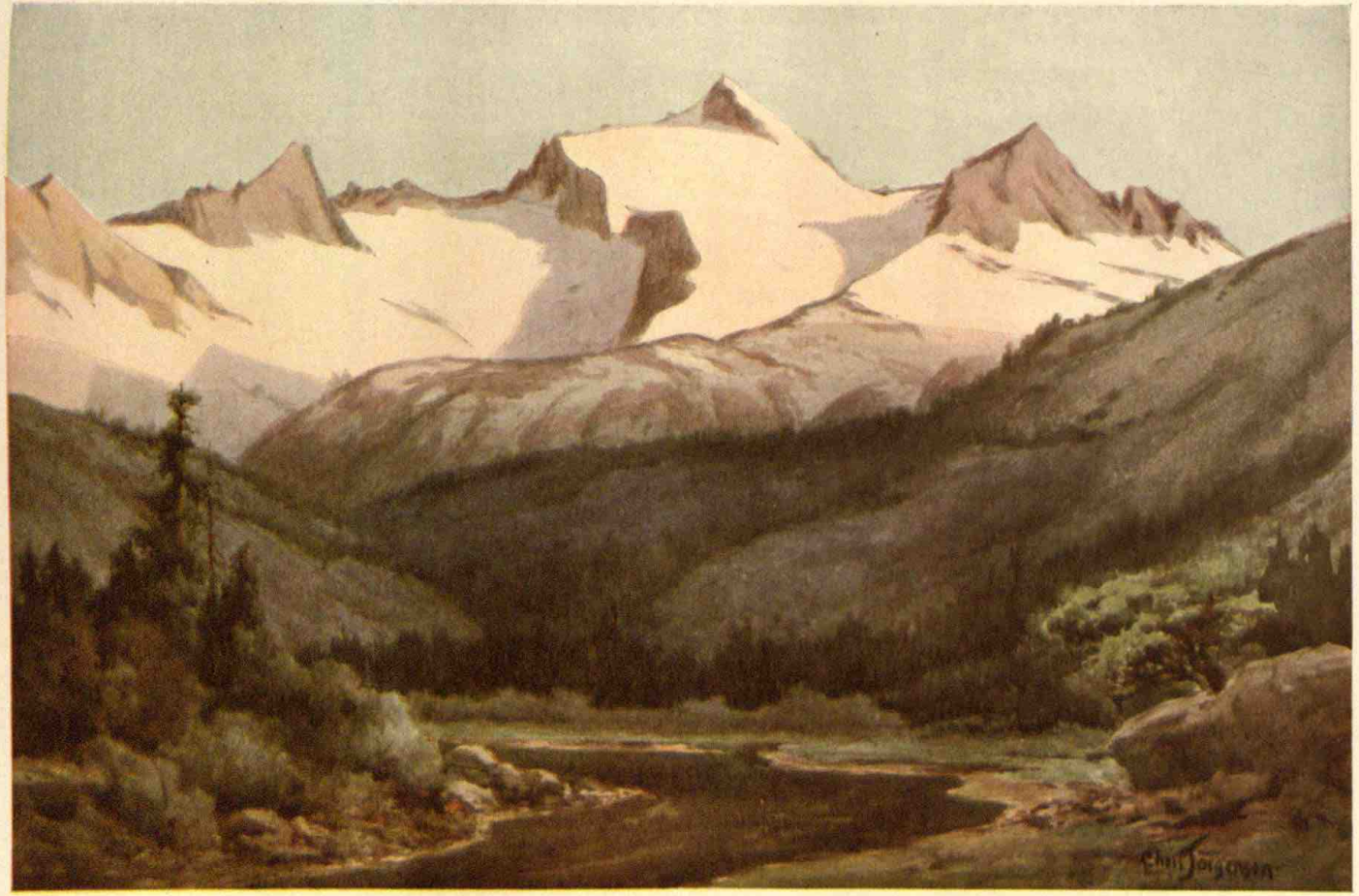
View East from Benson Pass (10,130 ft.). In the foreground, Wilson Creek Cañon leads down to the Matterhorn Cañon. Eight miles east, Conness Mountain rises at center of the sky-line.

twentieth-century science. So little were these things known a few years ago, indeed, that the famous Scotch geologist, Professor Geikie, could describe the "corries" or cirques of the Scotch Highlands as mainly excavated by "convergent torrents," dropping over their rims! But if Geikie's theory begged the question, it remained for our distinguished American scientist, Dr. Gannett, president of the National Geographic Society, writing as late as 1898, to ascribe the cirque to the avalanches which its steep walls induce:

Snow Plant (Sarcodes sanguinea),—the most curious and brilliant decoration of the Yellow Pine belt, where its scaly stems and fleshy blood-red flowers closely follow the retreat of the snowbanks.

> Glaciers commonly head in amphitheaters or cirques—basins lying under the shadow of the summit cliffs. An amphitheater is surrounded on three sides by vertical walls or steep slopes, down which the ice and snow slide in avalanches. The effect is precisely like that of a waterfall. The falling snow and ice dig a hollow or depression at the foot of the steep descent, just as water does. Such amphitheaters are found at the heads of all glacial gorges in the high mountains.—*National Geographic Magazine*, vol. 9, p. 419.

Dr. Gannett assumed the existence of the "vertical walls" and "steep descent"—the very things his theory professed to account for! But field work by Johnson and Matthes discovered the real cause. It is the bergschrund that digs the cirques and levels the peaks.



Mt. Lyell and its Glacier.

I know a mountain thrilling to the stars,
  Peerless and pure, and pinnacled with snow;
Glimpsing the golden dawn o'er coral bars,
  Flaunting the vanisht sunset's garnet glow;
Proudly patrician, passionless, serene;
Virgin and vestal,—O, a very queen!—*Robert W. Service.*

The Minarets. Mt. Ritter. Banner Peak.

Banner Peak (12,957 ft.), Mt. Ritter (13,156 ft.), and the Minarets (12,000 ft.), seen from Shadow Lake (8,700 ft.), east of the range. These peaks are about five miles east of the Yosemite National Park, from which they are separated by the basin of the North Fork of San Joaquin River.

California's mountains crown all her diversified wealth of scenery and climate. The story of her old glaciers is as fascinating as the new life of tree and flower which they have made possible. Under the gentle and unfailing sunshine of the highlands, on one of their broadest alpine meadows, those dauntless explorers, the members of the Sierra Club, led by America's greatest mountaineer, their president, have discovered the very Fountain of Eternal Youth, and proved it no fable, but a fact of the Yosemite Sierra. And what a leader is John Muir! As one talks with him, or reads his books, George Sterling's lines on another great Californian come to mind:

Of all he said, I best recall:
"He knows the sky who knows the sod;
And he who loves a flower loves God."
Sky, flower and sod, he loved them all.

Group of 250-foot Sequoias, showing characteristic dome shape of crown when unbroken. The sharp-pointed trees at sides are White Firs (Abies concolor).

The Sierrans testify their love of the mountains by spending a month each summer among them. This is the sanest and most joyous of sport. It was my privilege for the first time to join the club's large party last July at their camp in Tuolumne Meadows, and there learn how two hundred and fifty men and women, drawn from all the professions, lawyers, teachers and students, doctors, preachers and business men, were able, after a day's climbing, to gather about a huge campfire, and jest away their weariness in club songs:

Nearing the Summit of Mt. Lyell.

In the mountains of California,
We're hitting the trail and shoving our feet along.

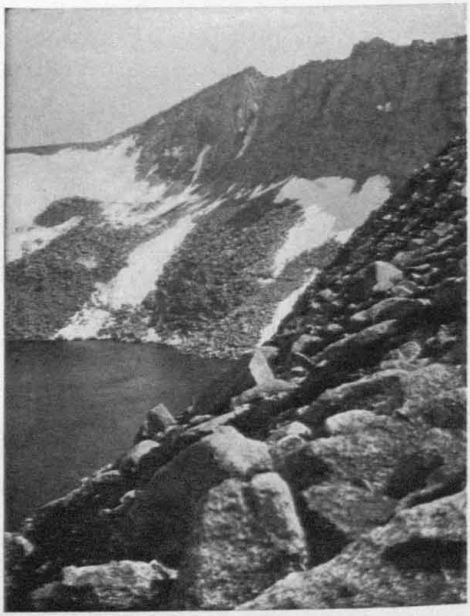
Or, still more pathetically:

There are rocks in the cradle where I sleep,
And roots and cones embedded deep;
Aslant I lie upon my bed,
My feet are higher than my head.
I know I shall not hear the "call"—
My camp is farthest off of all;
And so I dare not go to sleep,
While ants and lizards o'er me creep.

Piute Mountain, and Lakelet near the head of Seavey Pass.

Ah! those mountain firesides, after the long marches over the snow-fields, or across the passes, or down the cañons! We were not always frivolous. One evening, a brilliant college philosopher put into crisp English Plato's legacy to modern life. Again, a returned diplomat outlined America's relations with the Orient, and a well-known Hebrew scholar, turning from philology, very delightfully described the birds of Yosemite. Another night, a distinguished scientist from California's great university explained how he told the years of a trout. "We estimate the age of a tree," said the solemn professor, "by its growth rings. We estimate the age of a horse by its teeth. We estimate the age of a woman by counting ten, and then asking. We estimate the age of a fish by noting the circles in its ear-bones." No wonder those "serious" campfires drew crowds of tired trampers!

This inspiring society is one of the most useful of California organizations. Its intelligent efforts to make the mountain districts of the state better known and more widely enjoyed should have the support of many thousands of Californians, expressed by the payment of its modest membership fee. We complain that the East goes to Europe to see mountains. This will be true until we make our mountains as accessible as are the Alps, and as well known. The Sierra Club is hard at work on that task.



A Typical Glacial Cirque on Kuna Crest. Such a horse-shoe-shaped head-basin is dug by each glacier, using the bergschrund as a tool.

Upper Hetch Hetchy, viewed from Rancheria Trail on north side of Le Conte Point. North Dome is seen on the right, Kolana Rock in center, and Smith Peak on the left, 4,200 feet above the floor of the Valley.

IV.

TUOLUMNE GRAND CAÑON AND HETCH HETCHY

I see an eagle sweep
Athwart the blue; a gleaming river bind
In gorgeous braid the valley's golden gown;
A cataract plunge o'er its distant steep,
And flutter like a ribbon in the wind.
—*Herbert Bashford.*

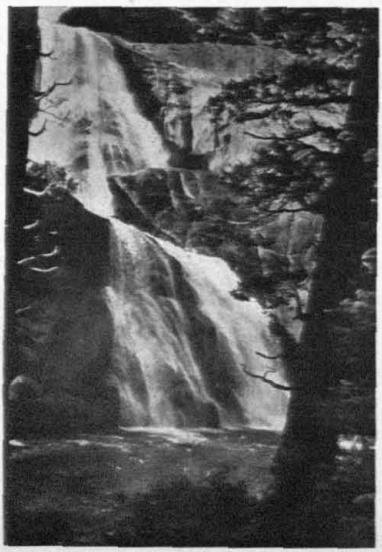
THE Sierra Club discovered the Fountain of Youth, which men have sought for centuries; and having taken possession of it, now plans to guard the treasure well, sharing it, however, with all who may come to drink its sparkling waters and breathe its mountain air. In the homelier language of to-day, this coveted fountain is the "Soda Springs." It is on the north rim of Tuolumne Meadows, a dozen miles by Tioga road from Tenaya Lake, and twice as far from Yosemite Village.

No finer spot could be found for a mountaineers' rendezvous in the High Sierra. The great valley known as Tuolumne Meadows—a filled-up lake basin at the junction of the Dana and Lyell Forks of the Tuolumne River—is about ten miles long and two in width.

Coasting on the Polished Granite, at the Waterwheels.

Lower End of Tuolumne Meadows, with Cathedral Peak on the sky-line. The Tioga Road skirts the south side of the Valley, which is also reached by many trails, making it the most accessible point in the northeastern part of the Park, while the important mountains surrounding it make it a favorite starting point for exploration. In the center of this picture is seen the Soda Springs tract of the Sierra Club, 160 acres, including the Springs themselves, at the edge of the wooded moraine north of the river bend. The Club will erect a lodge here. This view is from the summit of Lambert Dome.

On all its sides, the highest mountains of the central Sierra stand guard. Conness, Dana, Mammoth and Lyell peaks are upon the north and east. The unique Cathedral Range overlooks it immediately on the south. Lambert Dome rises from its floor, and, still more beautiful, Fairview Dome towers over its lower end, where the river, leaving its quiet meadow reaches, plunges down the vast Tuolumne cañon on its boisterous way to Hetch Hetchy.

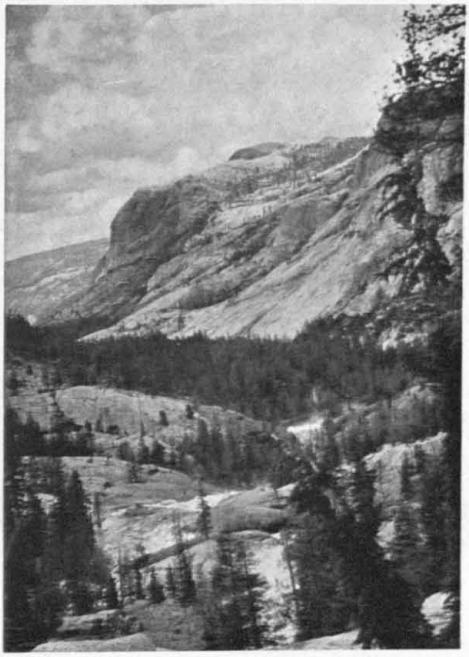


Cathedral Creek Falls, the fine cascade by which Cathedral Creek drops into Tuolumne Cañon.

Upon this capital site, the club has bought the old Lambert, or Lembert, homestead, a quarter-section in the heart of the Meadows, which was preëmpted by John Baptist Lembert, a stockman, in 1885, before the creation of the National Park. The tract embraces several fine mineral springs, and with one exception is the only private holding in the eastern section of the Park. The land is part meadow and part hillside facing the mountains on the south. Its central location, with the Tioga road running south and east, and trails radiating to all parts of the Tuolumne watershed, makes it

the natural starting point, either for mountain climbing, or for exploration of Tuolumne Cañon and the alluring region north of it. From it one goes with equal directness across the passes to Mono Lake or west to Hetch Hetchy.

Three or four times, at intervals of three years, the club has made Tuolumne Meadows a base for its summer explorations; and now, on the one hundred and sixty acres which good fortune has enabled it to acquire, it proposes during the coming summer to erect a lodge and establish a camp, thus making Soda Springs its permanent Tuolumne headquarters. Here will be provided simple entertainment, not only for members of the Sierra Club, but also for those of similar associations who may visit the Meadows, and for such others as there may be room to accommodate. It will be named "Parsons Memorial Lodge," in honor of the late Edward T. Parsons, long a director of the club, and one of its most active mountaineers. Arrangement for accommodations should be made at LeConte Lodge in Yosemite. As the Panama-Pacific Exposition will doubtless bring a host of mountaineers to California, the new camp on the Tuolumne should aid many in exploring the Park.

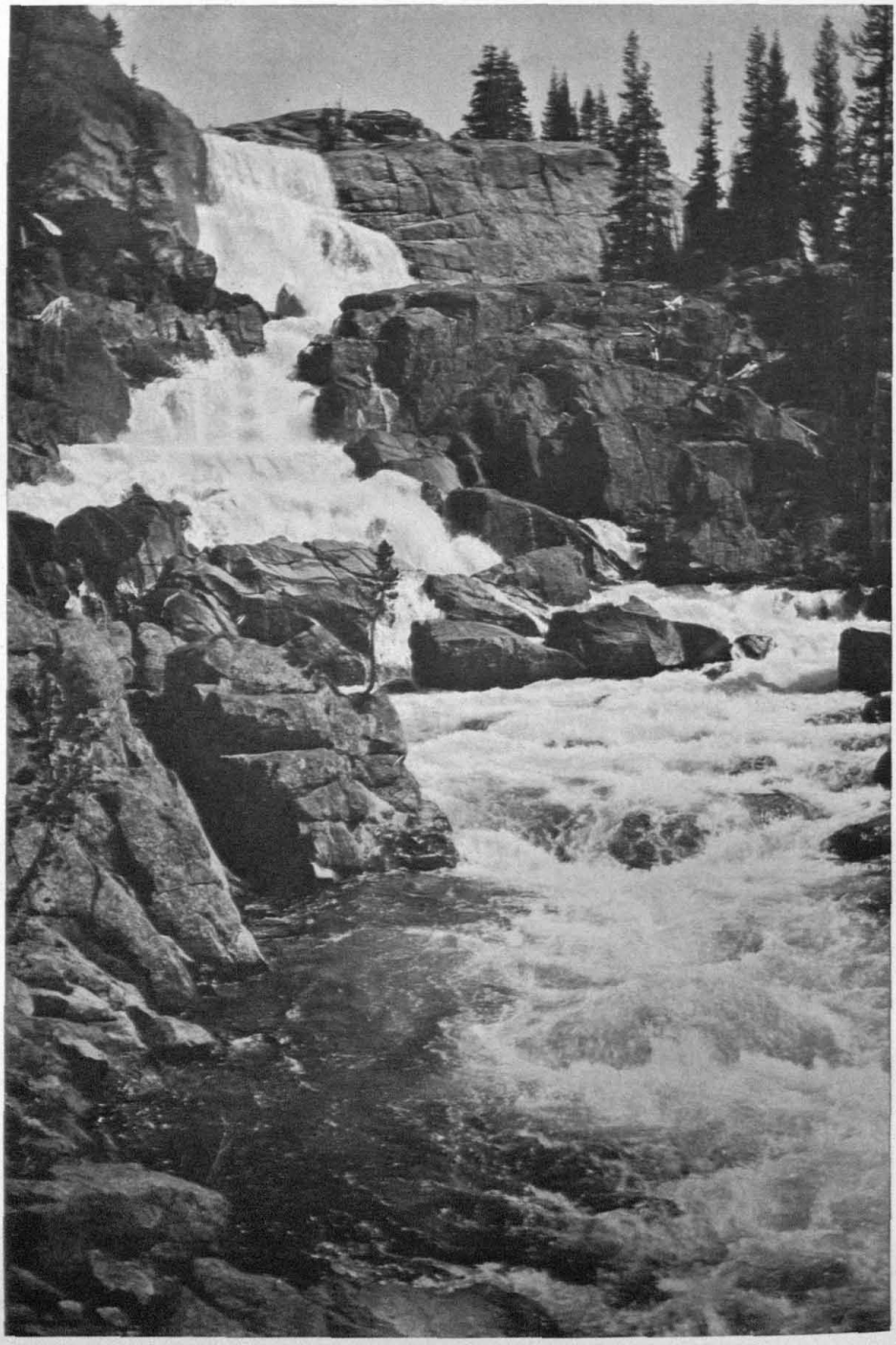


Glen Aulin and Wildcat Point, near the upper end of Tuolumne Grand Cañon.

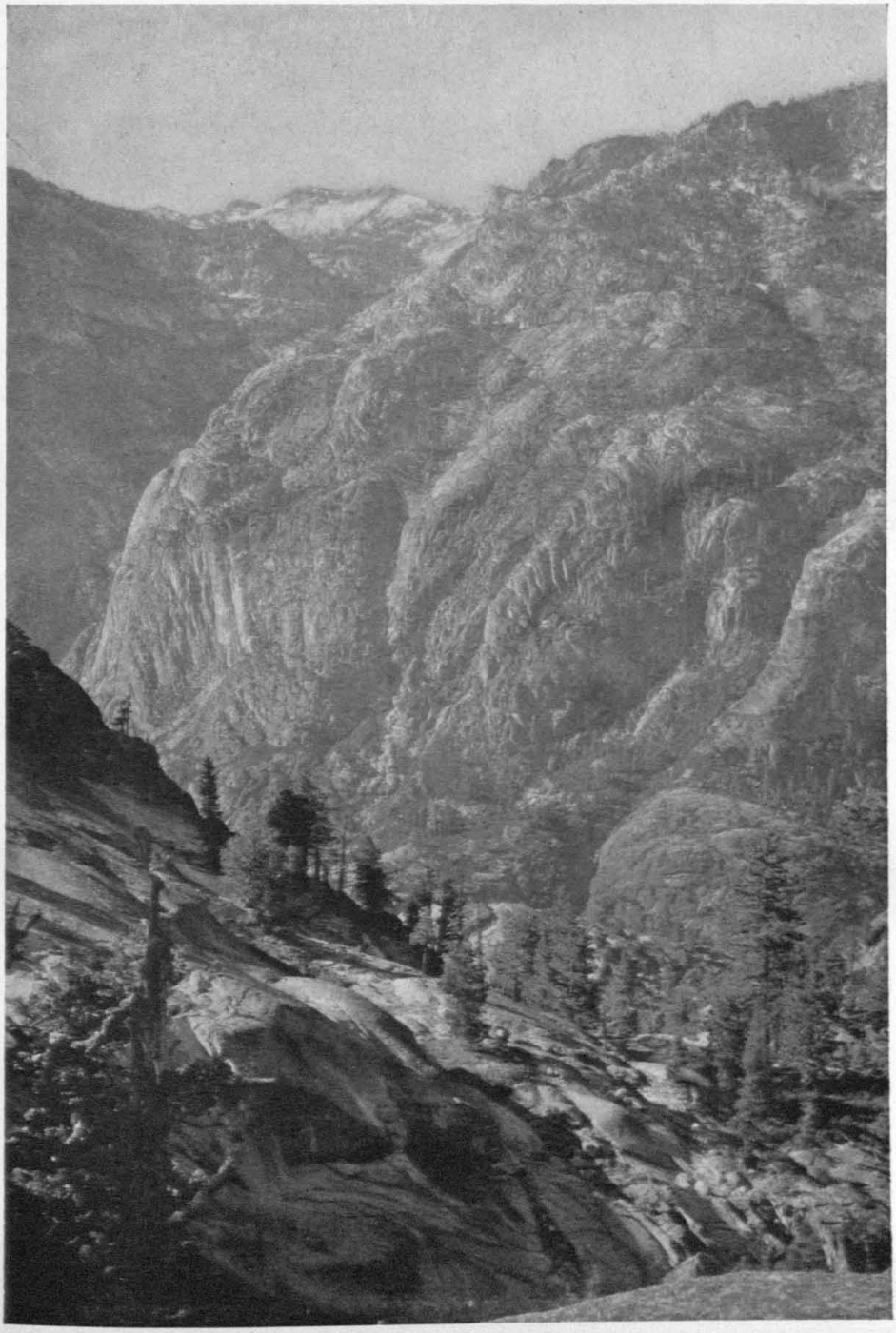
It is a day's good walk from Soda Springs to the summit of Mt. Dana and back. The Tioga road and Dana Fork are followed to the foot of the mountain, whence the trail climbs the pass between Dana and Gibbs. The ascent from the saddle is short and easy. The summit of Dana commands a view of more snow-peaks, probably, than one can see with so little labor anywhere else on the continent, while a mile down on the east side lie Mono Lake, rimmed with fine mountains, and, south of it, a gray and grim line of volcanic peaks.

Spermophiles at Conness Creek.

From the Dana-Gibbs saddle one day last July,—the only stormy day



Tuolumne Falls, at the Head of the Grand Cañon of the Tuolumne;—first and most important of the cascades by which this nobly turbulent river, dropping 5,000 feet in twenty-five miles, comes to the quiet waters and lovely wild gardens of Hetch Hetchy.



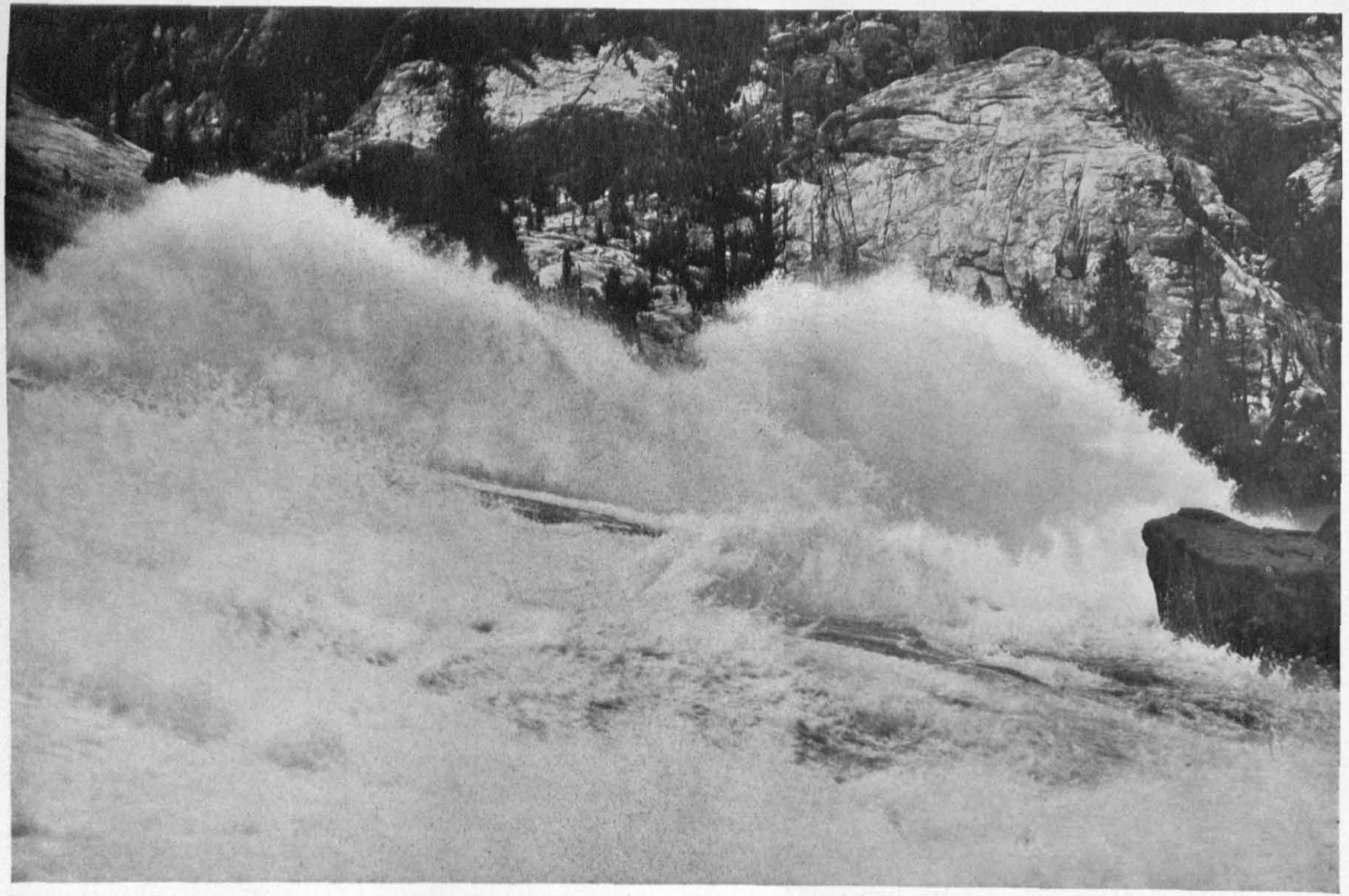
Grand Cañon of the Tuolumne, seen from its north wall, looking across to the deeply eroded side of Falls Ridge. This vast cutting by glacier and stream extends from Tuolumne Meadows to Hetch Hetchy, twenty-five miles in length and from 3,000 feet to a mile in depth.

Largest of the "Waterwheels," Tuolumne Cañon.

of the Sierra Club outing,—I beheld a scene that can never be forgotten. In Tuolumne Meadows, westward, it was raining lightly; but below us, on the east, a wild thunder-storm swept the Mono Lake basin with lightning and rain. All the great amphitheater seemed filled with the black, solid mass of the tempest; but as flash upon flash pierced the darkness, we saw, vivid as day, the breakers beating the shore of the lake, and the trees upon the islands that dot its breast. While this storm blackened the Mono basin at our feet, beyond, stretching far into Nevada, range after range rolled away, waves of a sea of mountains, flashing in the same sunshine that bathed our lofty outlook.

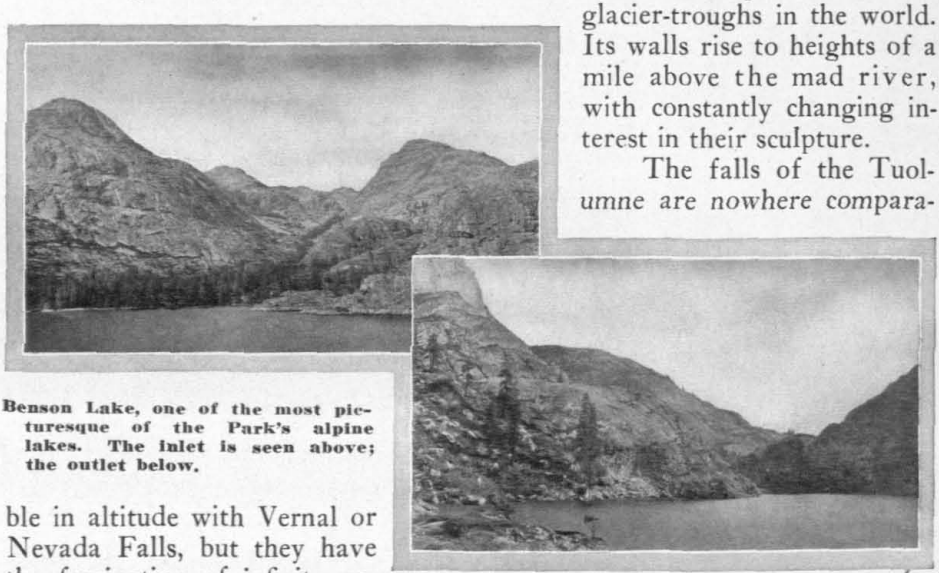
A Fair Knapsacker, ready for Tuolumne Cañon trip.

Other peaks are reached from the Tuolumne base with almost equal ease. The trail to Mt. Lyell and its neighbors follows up Lyell Fork, and unfolds a succession of splendid mountain pictures. In other directions, trails lead north to Conness Mountain, remarkable for the sheer walls of great glacial head-basins, and to beautiful Matterhorn Cañon and the Benson Pass country. Those who like still harder climbing may go with the Tuolumne down the whole length of its rough cañon to Hetch Hetchy. The Sierra Club parties commonly divide, as did that of last summer, part taking the trails



Waterwheel Falls, in the Tuolumne Grand Cañon. Here the river, shooting down a smooth granite flume, strikes several bowl-shaped depressions formed by the erosion of comparatively soft spots in the rock, and is hurled far aloft, thirty to forty feet at high water, in the remarkable "wheels" shown above.

across the uplands, the rest choosing the pathless river gorge. The former route offers the inspiration of wide views from the heights; the latter, the zest of a long scramble across huge boulders and polished benches, around frequent cascades, and over the walls of such impassable box-cañons as Muir Gorge. The cañon of the Tuolumne is one of the deepest and wildest glacier-troughs in the world. Its walls rise to heights of a mile above the mad river, with constantly changing interest in their sculpture.

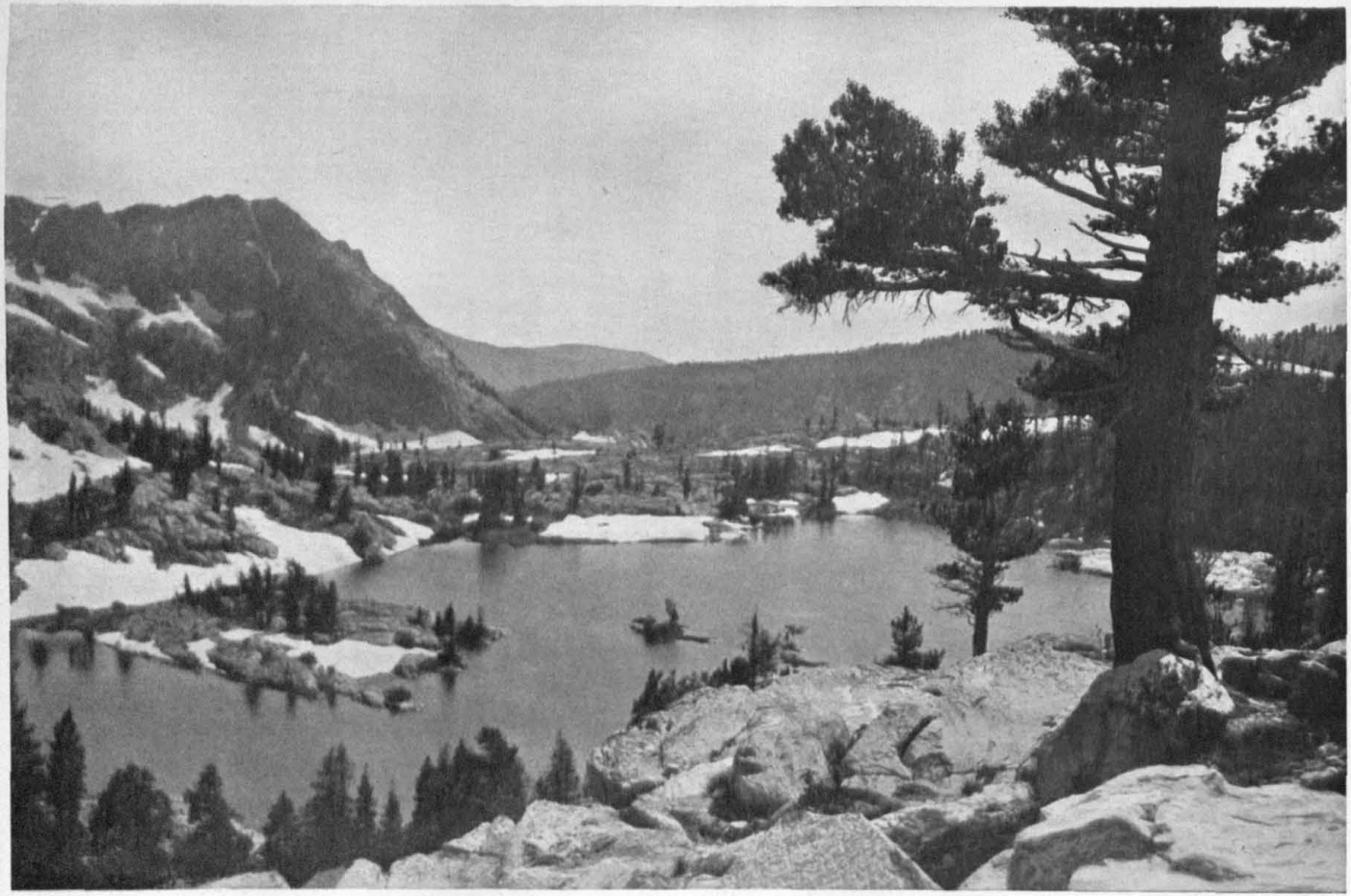


Benson Lake, one of the most picturesque of the Park's alpine lakes. The inlet is seen above; the outlet below.

The falls of the Tuolumne are nowhere comparable in altitude with Vernal or Nevada Falls, but they have the fascination of infinite variety and the impressive power of repetition, while their setting, at the bottom of this truly grand cañon, is far more stupendous and wonderful than that of the great Merced cataracts. For twenty-five miles of cascades, rapids, sheer falls of considerable drop, and delightful glacial tarns, the wild river plunges down a path so narrow and difficult that to follow it two or three miles is sometimes a day's work for a party of experienced climbers. Even these climb over and around Muir Gorge, rather than risk their lives in its deep flume.

Camping at Conness Creek basin, below the splendid Tuolumne Falls, and at the foot of the noble White Cascade, most of the Sierra Club party in July went down the cañon as far as the Waterwheel Falls. These surprising water forms are found where the turbulent river, shooting down smooth inclines at furious speed, drops into spoon-shaped depressions caused by the erosion of soft rock. The water is hurled aloft, twenty to forty feet at different stages of the stream, and

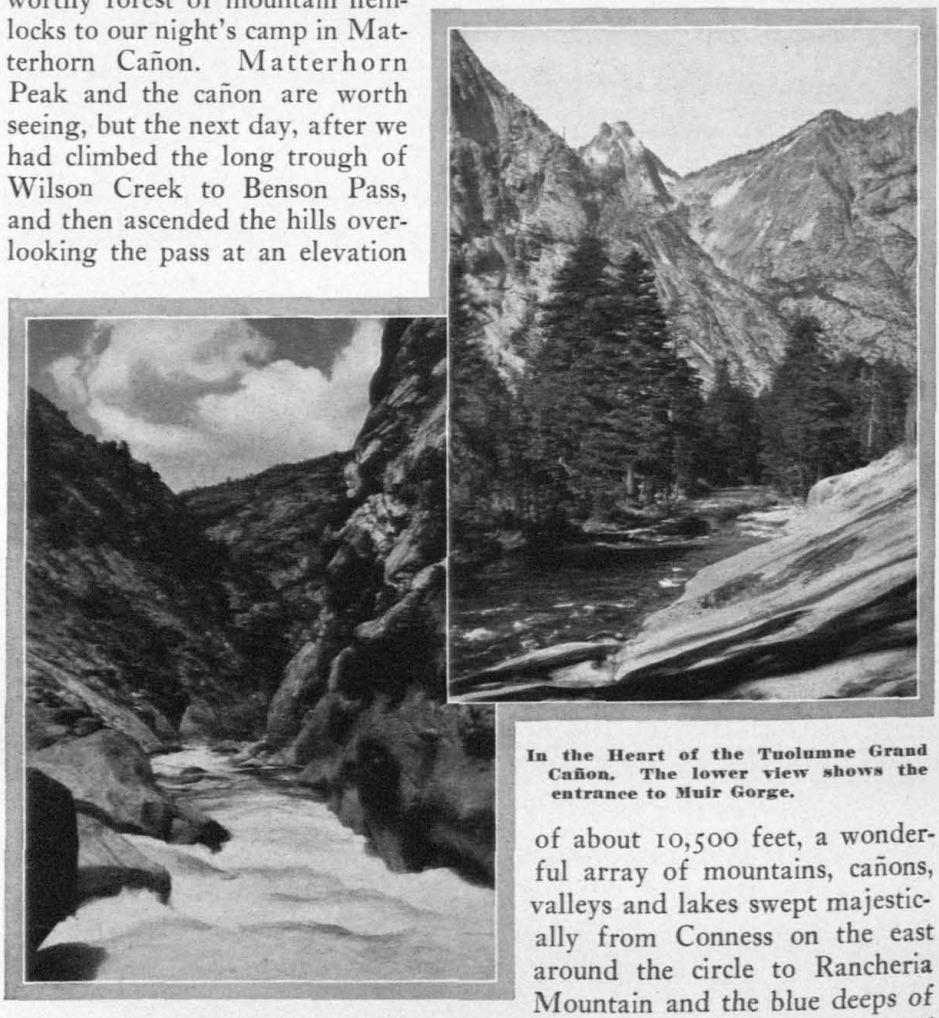
Cookstoves on the march. Part of the Sierra Club's commissary in motion.



Rodgers Lake. View looking down from the trail to Benson Pass. This fine alpine lake is a favorite camping spot of the Sierra Club and other parties exploring the north side.

the backward action of the spray gives a good imitation of a wheel revolving with great velocity.

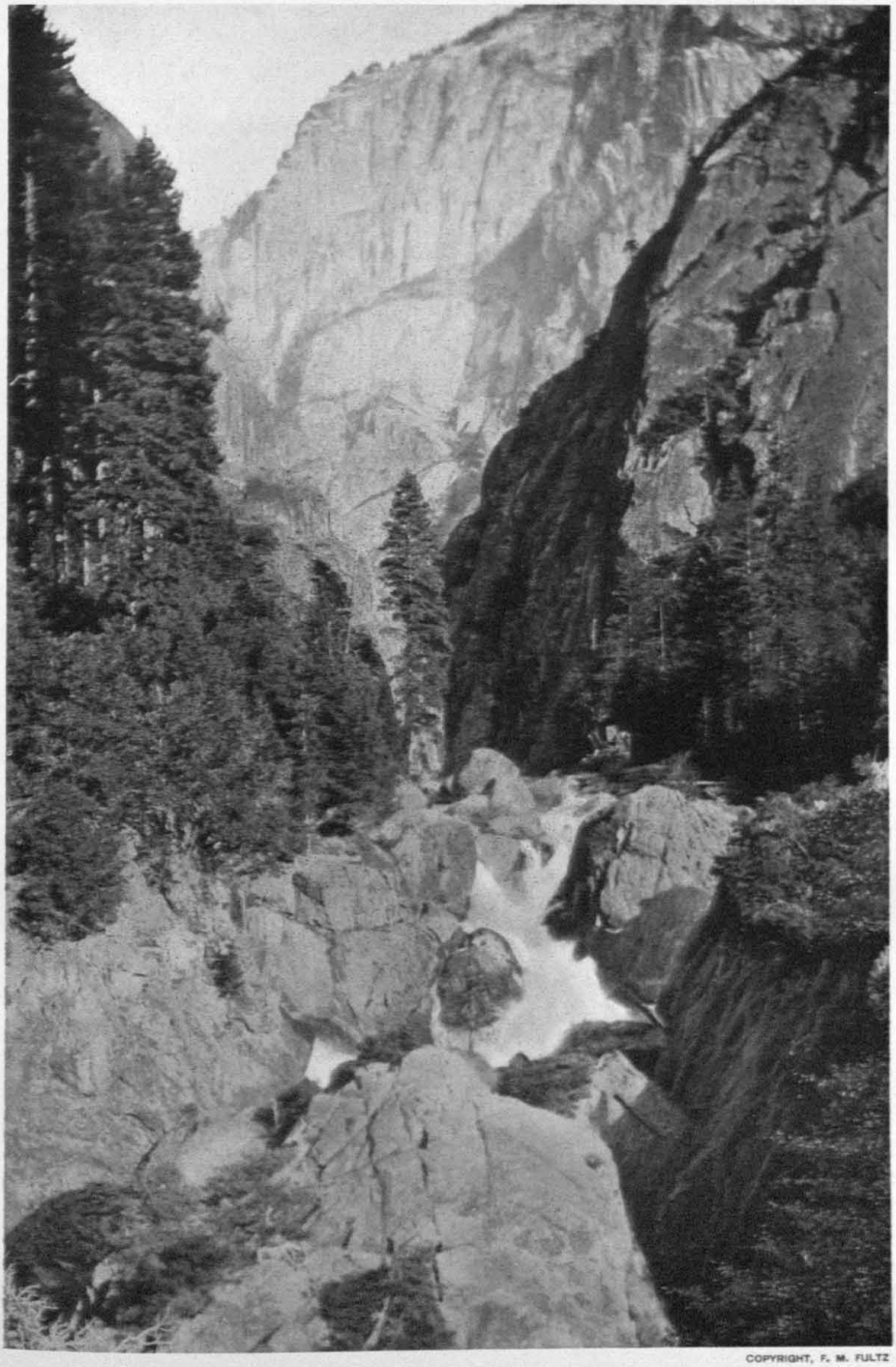
Returning to Conness Creek, we took the high trail up the fine Cold Creek Meadows, and across Virginia Cañon, thence climbing an unnamed pass to reach Miller Lake, and late in the day descended through a noteworthy forest of mountain hemlocks to our night's camp in Matterhorn Cañon. Matterhorn Peak and the cañon are worth seeing, but the next day, after we had climbed the long trough of Wilson Creek to Benson Pass, and then ascended the hills overlooking the pass at an elevation



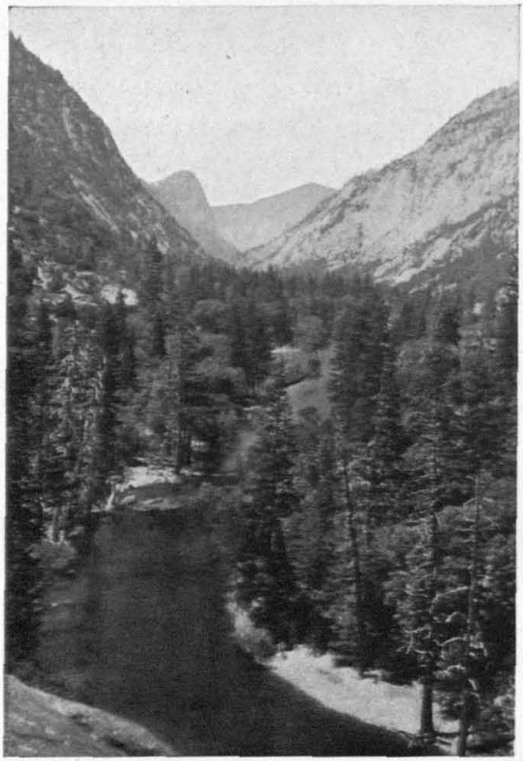
In the Heart of the Tuolumne Grand Cañon. The lower view shows the entrance to Muir Gorge.

of about 10,500 feet, a wonderful array of mountains, cañons, valleys and lakes swept majestically from Conness on the east around the circle to Rancheria Mountain and the blue deeps of Tuolumne Cañon in the southwest. Everywhere the vast amphitheater told of its ancient inhabitants, the glaciers, now long vanished, but proclaimed in the clean-cut cirques, deep-set glacial lakes, and silvery waterfalls dropping from hanging valleys high on distant cañon rims.

Descending from Benson Pass, the trail wound round Volunteer Peak, past Smedberg Lake, and in the sunny afternoon brought us to camp on



Muir Gorge. View from its lower end, looking up the Tuolumne. Half a mile above this point the river contracts into a race-like stream, hemmed in by the precipitous walls of a box cañon, impassable save at lowest water. Only a few daring climbers have ever made the trip.



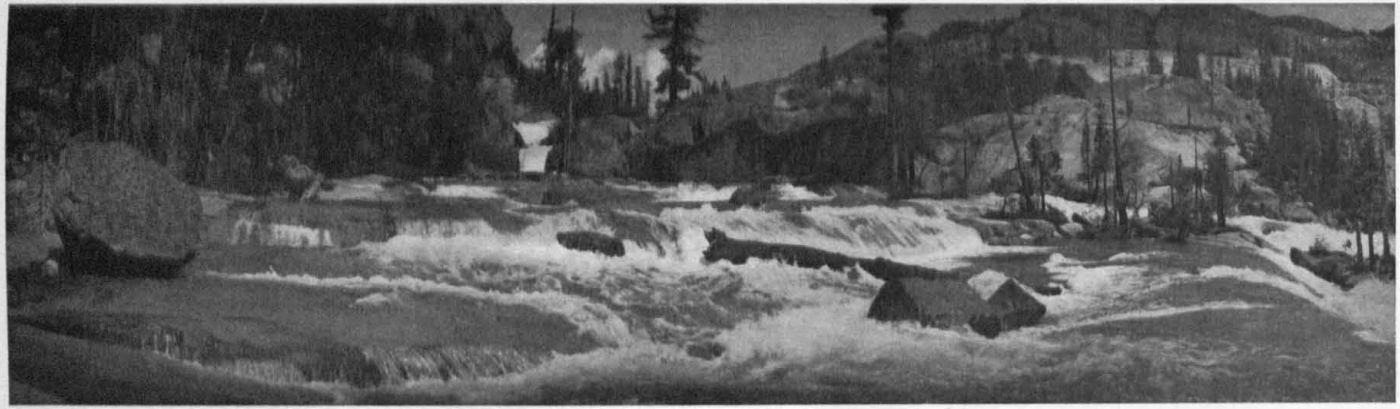
Little Hetch Hetchy, a mile above the main Valley; Kolana Rock in the distance.

Rodgers Lake, the queen of all the lakes, on the north side of the Park. Leaving this camp the next morning, abandoning the delightful lake shore was a hard parting. But the day brought new wonders in the great views it gave us of Tuolumne Cañon, as the trail skirted its north wall. Camp at night at Pleasant Valley in Piute Cañon was followed by the long ascent of Rancheria Mountain, the next day, through forests of red fir (*Abies magnifica*) that were a joy to see. These stately trees justify Chase's enthusiasm: "If I were called upon to choose the one among the conifers that I would live and die by, I should choose the red silver fir, with no fear of ever wearying of its sublime companionship."

Reaching camp on Rancheria early in the afternoon, we had more glimpses down into the Tuolumne abyss, and still more the following morning, when the trail led us westward to Rancheria Creek. The descent into its cañon brought us to its charming falls, and finally to the Mecca of our pilgrimage, lovely, famous, fought-over Hetch Hetchy.

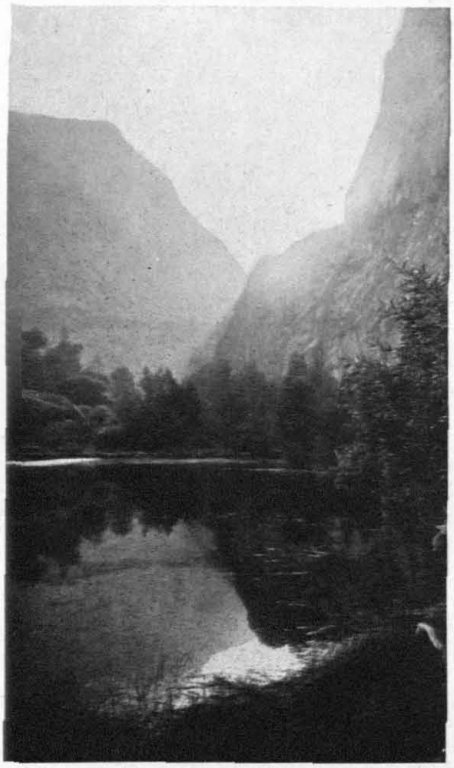
This book is not a brief for or against the San Francisco power and water dam. Enough has already been said on both sides of that controversy that were better left unsaid; and although I have been heartily with those who opposed the commercializing of any of our too few national parks; who deemed Hetch Hetchy, properly drained and made accessible, infinitely more valuable, even to California, as a park than it can ever be as a reservoir for water that is obtainable elsewhere; and who saw behind the call for increased water supply a

Weighing the Dunnage. This ceremony precedes each day's march on a Sierra Club outing.



Waterfalls and Cascades in the Tuolumne Grand Cañon.

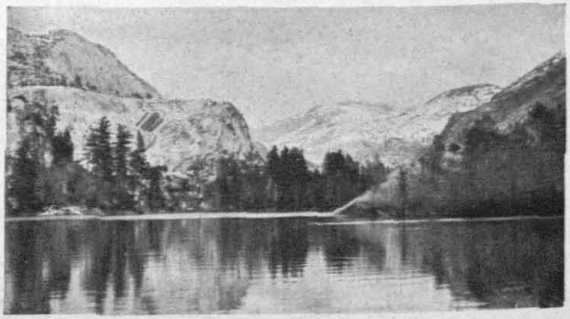
River, Meadow and Forest in Hetch Hetchy. Here the peaceful Tuolumne presents a striking contrast to its turbulence in the cañon above. The trees are mainly black oaks and yellow pines.



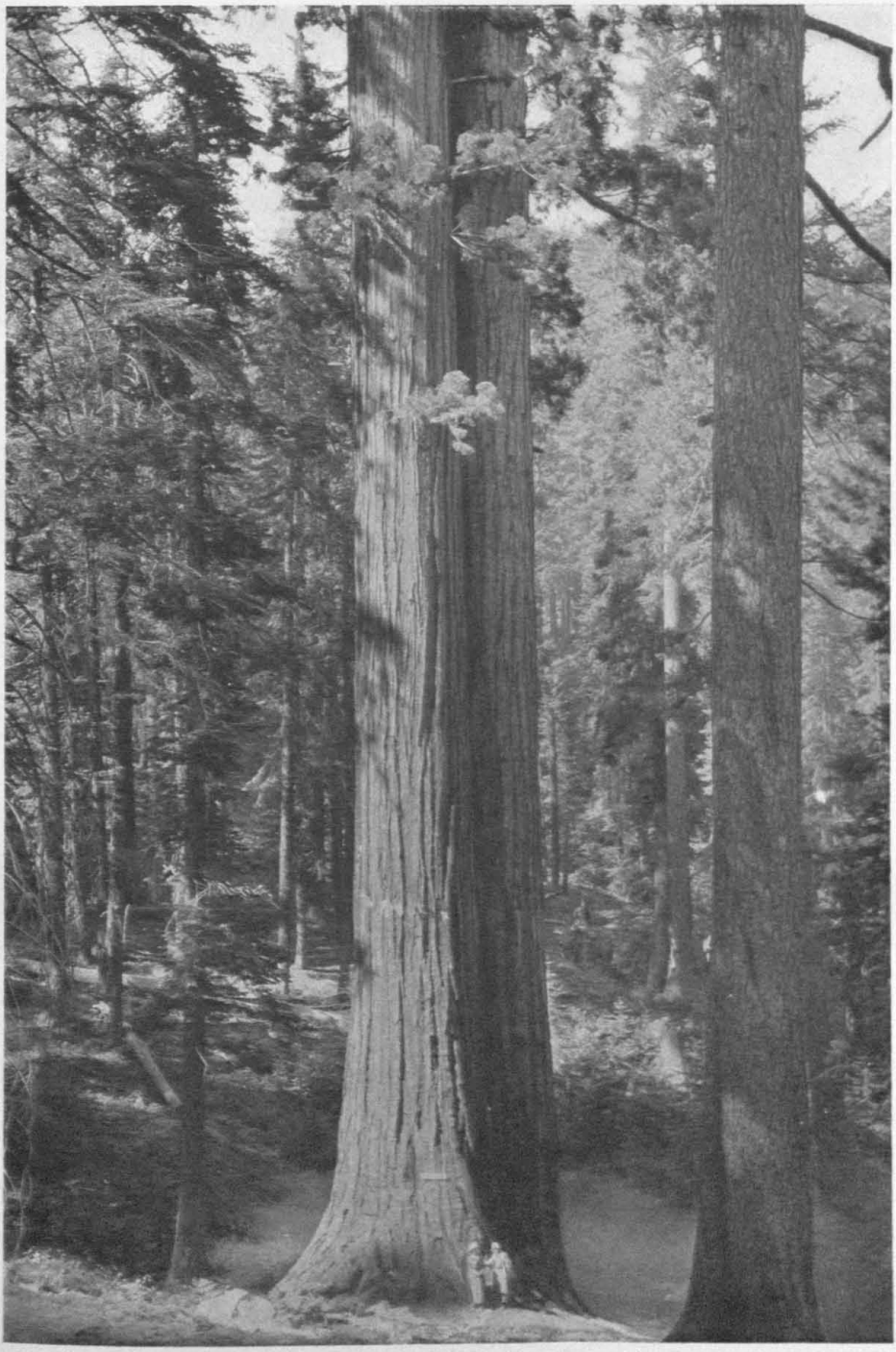
Sunrise in Hetch Hetchy.

vast municipal power project, and questioned the propriety of Congress endowing such an undertaking with public property worth many millions; nevertheless I recognize that many conservative and disinterested Californians, both in and out of San Francisco, hold the opposite view, believing that the conversion is necessary, and that it need not close the Tuolumne watershed, or preclude the establishment of sanitary camps and hotels for visitors who may wish to explore the Tuolumne highlands. The issue has been fought in good faith, and to a finish. Congress has acted sincerely in the belief that the necessities of this case transcend the danger of a possibly troublesome precedent. Its action, unless repealed, settles the question so far as the country at large is concerned; the matter now rests with the courts and people of California. I have room only to point out the fact that those who would know Hetch Hetchy must see it before it ceases to be the unique and glorious vale it is to-day. The Yosemite Park contains many lakes as fine as this will be; it has only one Hetch Hetchy.

If there were no Yosemite, Hetch Hetchy would doubtless be the most celebrated valley in America. But it is misleading, though easy, to describe it as merely a minor edition of the more magnificent cañon. The resemblances, of course, are startling. Sheer gray walls of granite, marked with "royal arches," crowned with domes, and hung with splendid waterfalls, rim a similar level valley floor. This records the filling of an ancient glacial lake, which is still more plainly recalled in the rock sill at its lower end. Here the Tuolumne, after flowing lazily for



Unnamed Lake in Eleanor Cañon, at the foot of the overhanging rock shown on page 134.



"The Twins," a splendid double tree in the Tuolumne Grove.

In Mariposa Grove.

Thy giant brood, . . .
Children of elder time, in whose devotion
The chainless winds still come and ever came
To hear an old and solemn harmony.
—*Shelley.*

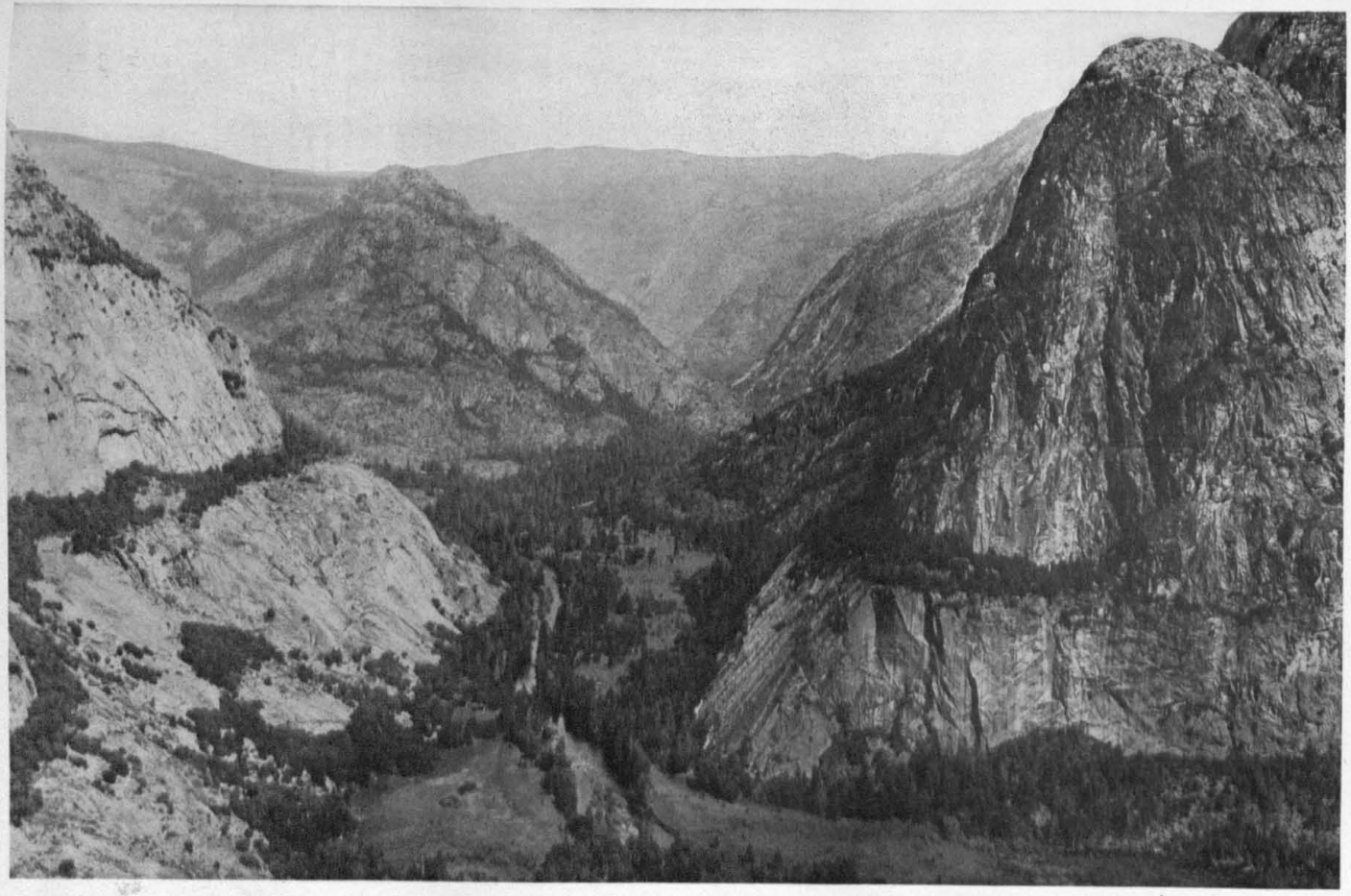
three miles amidst meadows and forests, is cutting a narrow box cañon, too shallow as yet to save the valley from annual inundation by spring floods. Freed thus from unwonted restraint, the impatient stream resumes its role as a cañon torrent, and bounds wildly away to join the San Joaquin.

Five-Finger Falls, in Rancheria Creek, Hetch Hetchy.

But Hetch Hetchy has a character and atmosphere all its own. It lies five hundred feet lower than Yosemite; it is only half as long and wide, with walls two-thirds as high. The smaller cañon is warmer, sunnier, more gracious. Its beauty is less appalling, but so much more intimate and lovable that save for the formal resemblance

Lake Eleanor, five miles northwest of Hetch Hetchy. This beautiful mountain-walled lake, enlarged by a dam at its outlet, will form part of the San Francisco water system.

Central Hetch Hetchy, the Yosemite of the Tuolumne. View from Surprise Point on the south trail. At the middle of the south wall (right), Kolana Rock rises approximately 2,000 feet. Opposite are two fine water falls, Tueculala and Wapama, with the Hetch Hetchy El Capitan (1,900 ft.) between them. Beyond is North Dome (2,400 ft.). The likeness of this famous but little known cañon to the still grander Yosemite of the Merced is seen in its sheer walls, with their cataracts, "royal arches" and domes; its level, filled-lake floor, and its winding river, bordered with flowery meadows and groves of splendid pines and oaks.



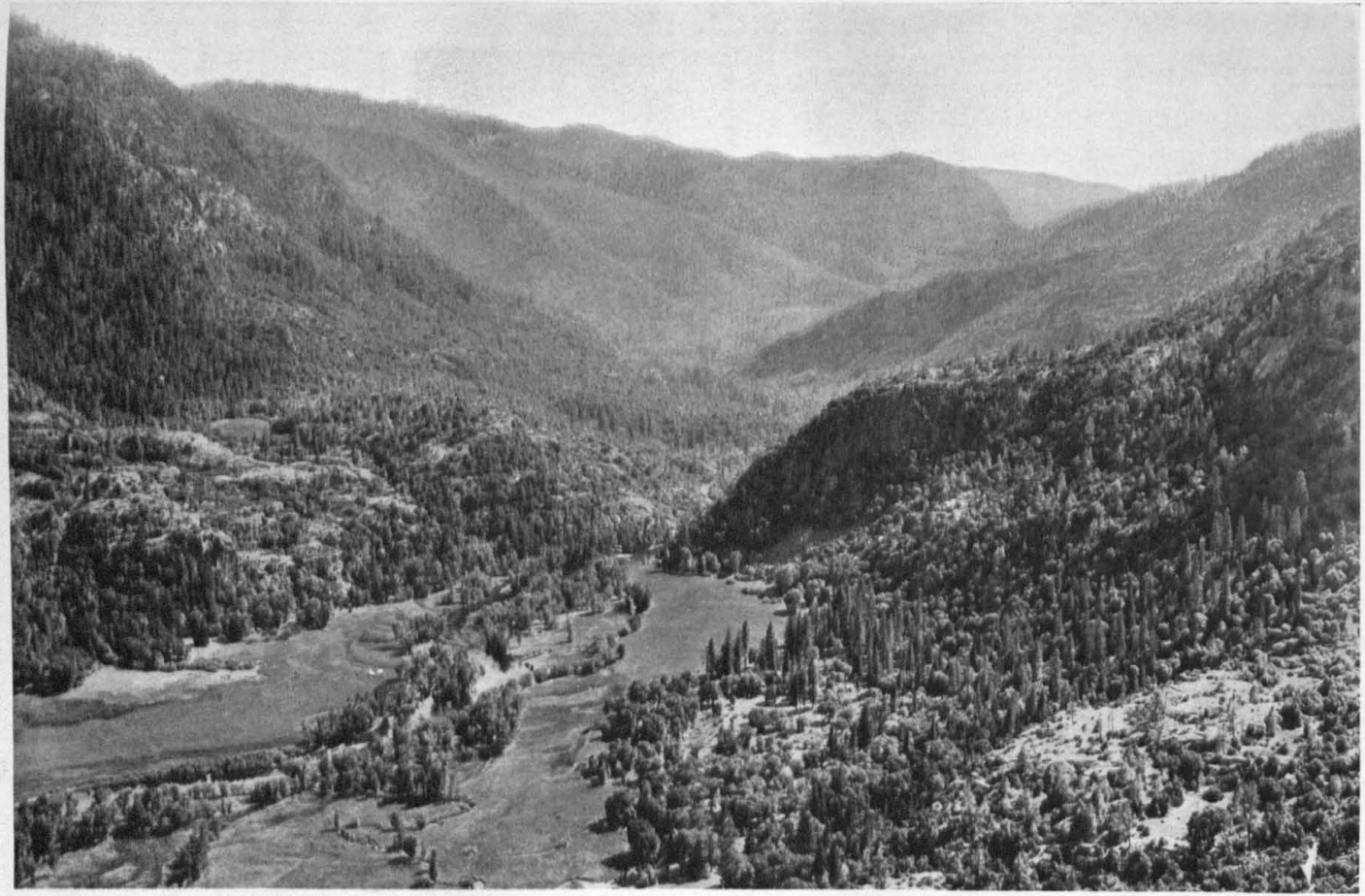
Upper Hetch Hetchy, seen from the bench of the north wall. The foreground shows the Valley at its least width. Its elevation above sea level is 3,660 feet. On the left, beyond the foot of North Dome, it widens to meet the cañons of Till Till and Rancheria Creeks; Rancheria Mountain forms the distant sky-line. Hetch Hetchy ends where Le Conte Point, the conical mountain in the middle distance, cuts off Little Hetch Hetchy beyond, crowding the Tuolumne River against the foot of Smith Peak, the long slope of which rises east of Kolana Rock on the right.

Yellow Pines (Pinus ponderosa).

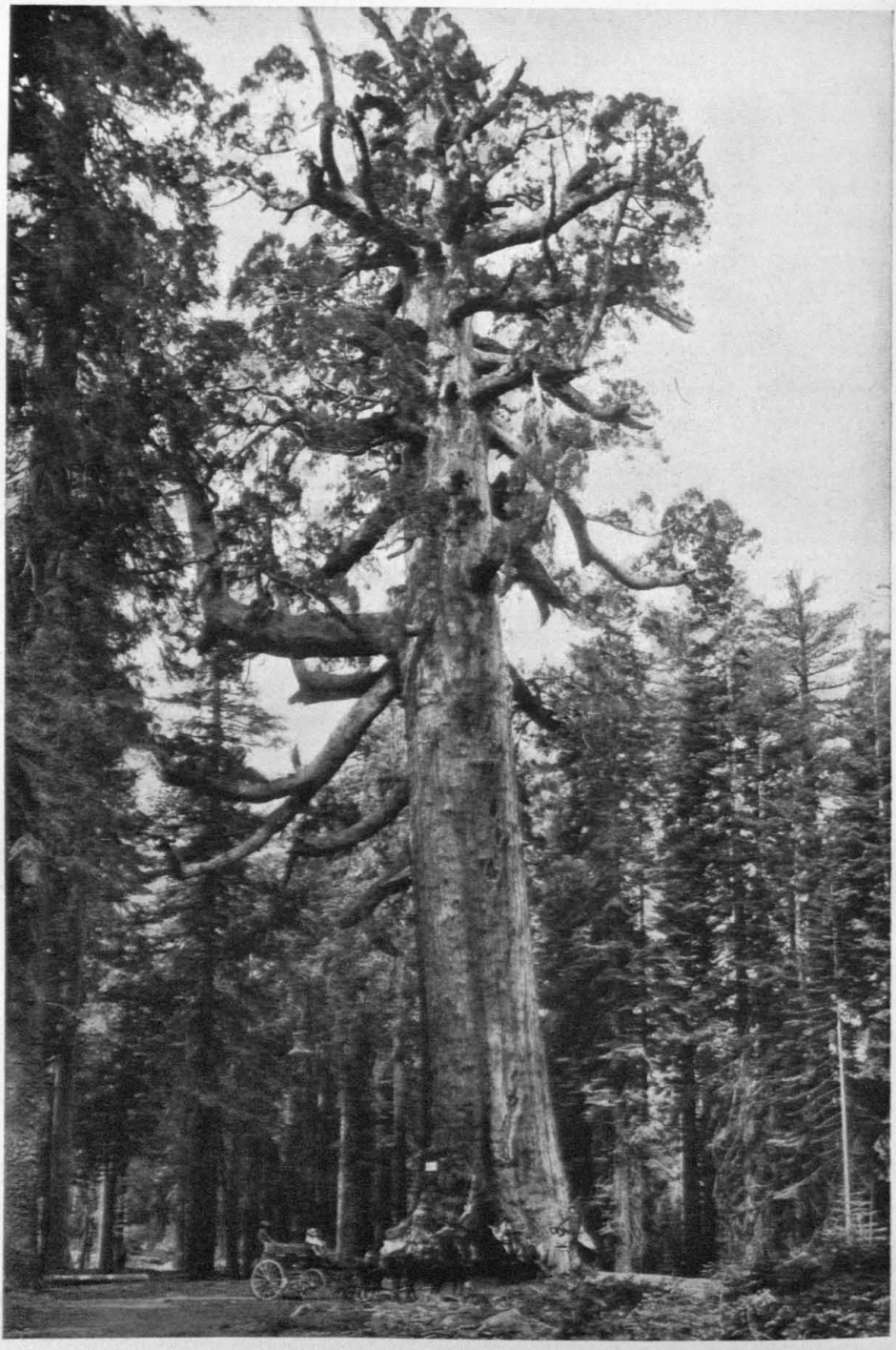
and contiguity of the two valleys, a reader of mountain character would hardly compare the gentler graces of Hetch Hetchy with the stupendous grandeurs of Yosemite.

The walls of Hetch Hetchy, imposing in their height and sculptured forms, will make a very splendid frame for the restored lake. Its two great waterfalls, with the cascades in the branch cañons of Rancheria and Till-Till Creeks, so far as not buried by the rising waters, will always be among the most beautiful in the Park. But its valley floor, with all the splendor of mountain flowers and stately forests, will be overwhelmed. No lake can ever compare with such a valley, or make up the loss of such groves of pines and oaks. Black oaks dominate this valley floor, just as the yellow pines are supreme on the floor of Yosemite. Taller than the live oaks, with vast crowns of bright deciduous foliage, they form here the noblest oak groves I have ever seen; and I advise my readers who love beautiful trees to see these great oaks, and walk among them, and bathe in the cool Tuolumne beneath their spreading shade, before it is too late.

Overhanging Rock at Eleanor Cañon. This little known cliff rises two thousand feet or more above one of the most beautiful lakes in the National Park.



Lower Hetch Hetchy, seen from the Lake Eleanor Trail. The dam which will impound the Tuolumne for San Francisco's water and power supply is to be erected at the end of the meadows, where the hills come together, forming a box cañon less than a hundred feet wide. It will have a height of 350 feet, throwing the waters back for seven miles, and flooding both Hetch Hetchy and Little Hetch Hetchy Valleys. Around the lake thus formed, it is proposed to build a fine automobile road.



A Contemporary of Noah. The famous "Grizzly Giant," patriarch of the Mariposa Grove, has watched the career of man upon the earth for at least forty centuries. It is one of a few very ancient trees found in the several groves, and believed to be survivors of a former generation of Sequoias,—doubtless the oldest of all living things. This venerable Big Tree is thirty feet in diameter; its largest limb is six feet thick. Its height, 204 feet, however, is less than that of many younger trees, the storms having destroyed much of its crown. It shows few signs of senility, and may live many centuries more.

Cavalrymen at the Cabin in Mariposa Grove. For many years the National Park has been policed by a detail of United States cavalry, and its Superintendent has been an Army officer. This system, however, has been changed by the present Federal administration to one of civilian supervision.

V.

THE "KING OF THE FOREST"

In terraced emerald they stand
Against the sky,
Each elder tree a king
Whose fame the wordless billows magnify.
—*George Sterling: "An Altar of the West."*

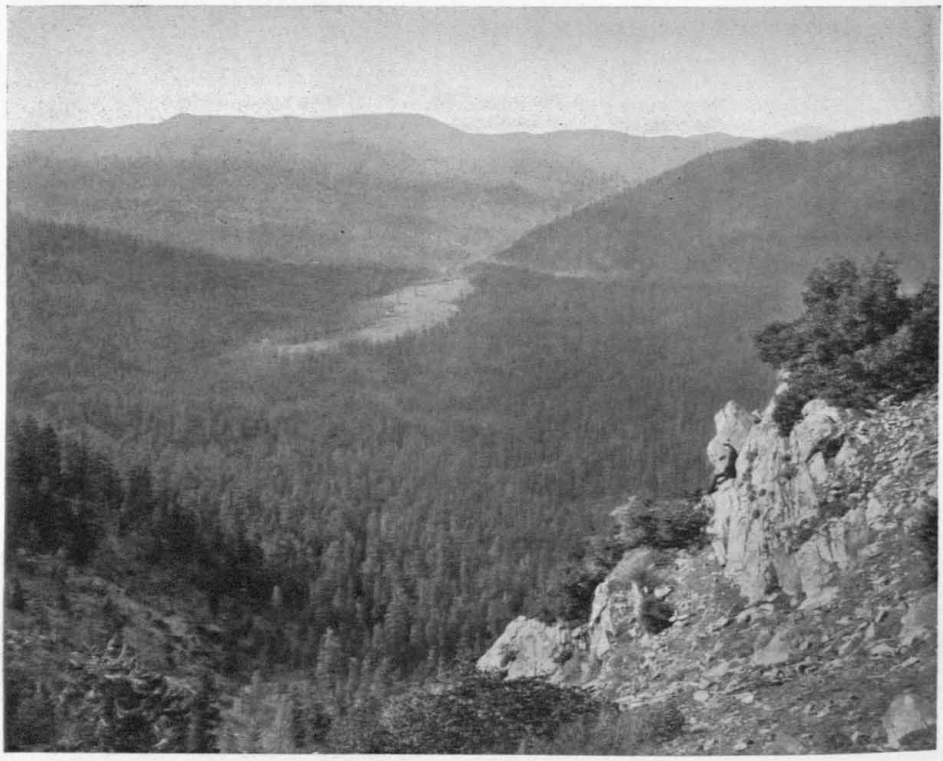
THE crowning glory of the Yosemite country is its forests. Of these the three groves of Big Trees (*Sequoia gigantea*), especially the great Mariposa Grove, reached by way of Wawona, represent the climax of plant life. To leave the Park without seeing them is unthinkable.

The Yosemite forests begin with the magnificent yellow pines and incense cedars (*Libocedrus decurrens*), as well as black and maul oaks, which do so much to soften and adorn the deep, wide valleys on the Merced and Tuolumne. Whether we look down on these notable forests from the valley walls, or walk among their

A Fish Story from Laurel Lake. One day's catch of a party of sportsmen.

fine trees, we quickly recognize that, unparalleled as is their setting, they are worthy of it.

Quitting the valleys for the uplands, we soon find the yellow pine yielding in number to the great sugar pine of California and southern Oregon. On the plateaus above, first place is taken by white fir (*Abies concolor*), and held up to about 7,500 feet, where the still more imposing red fir (*Abies magnifica*) supplants it. Each of these typical Sierran trees forms large and delightful forests in many parts of the Park. Along with



Wawona Meadows and the South Merced Valley, seen from Wawona Point, near the Mariposa Grove.

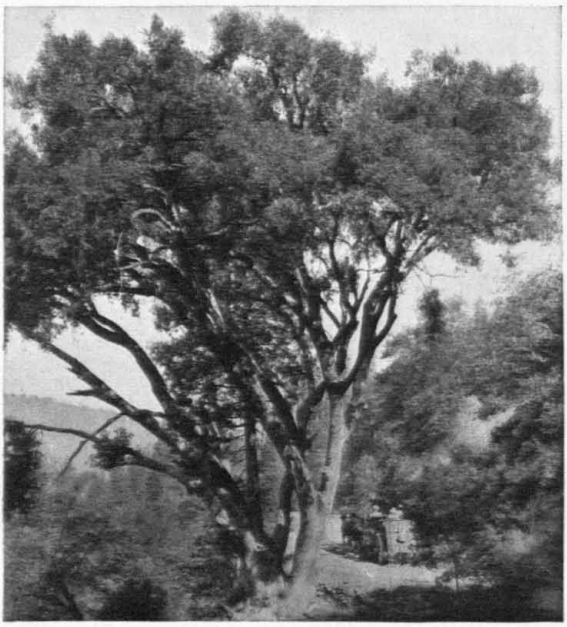
red fir, Jeffrey and mountain pines are found, to the nine thousand foot level and beyond, where the graceful mountain hemlocks dwell, and the tamarack or lodgepole pine (*Pinus contorta murrayana*) takes up its task of covering the thinnest soils with gaunt forests that seem to belong to the stern, new landscapes. On the highest ridges, outposts of stunted white-bark pine (*Pinus albicaulis*) march with the hardiest alpine flowers to the very snow-line. But it is the Sequoia which, in interest and importance, rises immeasurably above the Park's other forest wealth, peerless among all growing creatures of the soil in age and size, and equally preëminent in beauty and distinction.

Would you know what the famous Big Tree really is, how it outlives all its forest comrades, enduring by the pluck that meets calamity with a laugh? A volume of botanical data would tell less of its habits, its virility, than one may learn by seeing a single example of Sequoia well-doing. Let us visit the little Tuolumne Grove, on the west boundary of the Park. This contains only thirty trees, among them some of colossal size and perfect proportion. But we have come to see a burnt and shattered stump that sets forth the virtues of its clan more bravely than any of its comelier peers. It is the so-called "King of the Forest."

Red Fir (Abies magnifica), on Rancheria Mountain.

Among my boyhood friends was a worthy but broken old man. In earlier years he had served his community well. Then misfortune and ill health dealt him a cruel slap, and his kindly heart took on a veneer of eccentricity. He became a village "character." His neighbors, loving him but knowing the twist, put him gently by as a negligible "back number." But when a test came that tried the soul of our town,

"Alabama," in the Mariposa Grove. Its typical dome-shaped crown indicates that it has been exceptional in thus far escaping damage by storm.



Maul Oak (Quercus chrysolepis), on Wawona Road. This familiar tree, also known as "Cañon Live Oak," "Gold-Cup Oak," etc., is common on hillsides and cañon walls in the lower half of the Park, and covers the talus and rock ledges of Yosemite and Hetch Hetchy with low-spreading evergreen foliage.

it was "Old Ben," the superannuate, whose fiber and courage saved the day.

The forest life, too, has its crises; it provides tests of the hardest. And as human wrecks often regain their footing and make good, so a tree that by all signs is down and out, like an obsolete and seedy politician, or king discrowned, —may not it "come back"?

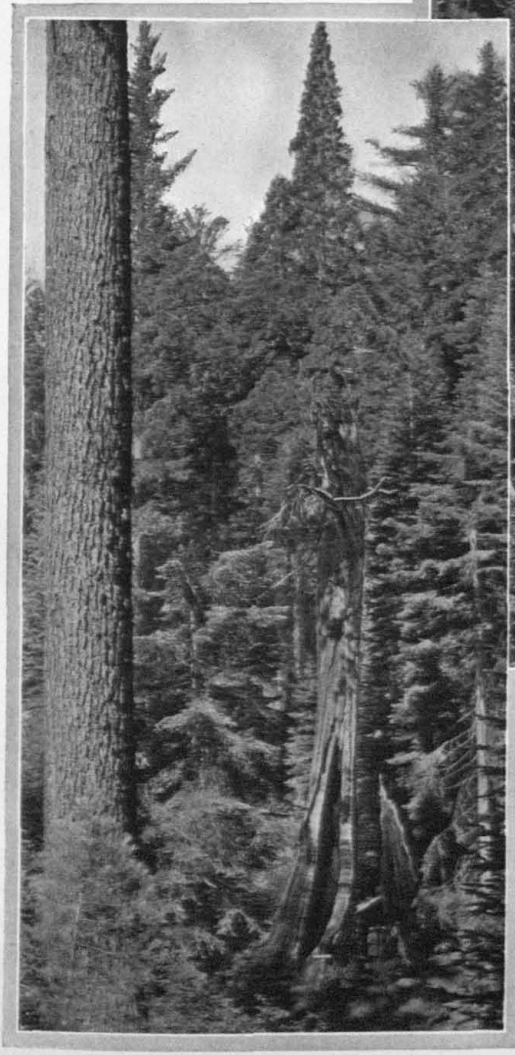
Originally our tatterdemalion "King of the Forest" was one of the noblest Big Trees. It had a circumference of nearly a hundred feet. Its height was doubtless three hundred. Its crown was worthy of a monarch of giants. Around it the tides of ordinary tree life rose and fell. Pines and firs, the sturdy commoners of the forest, spanning out their little generation of three or four centuries, came and went. But His Sequoia Majesty ruled on. For two thousand years, or even three, it was the pride of its stately grove.

Then came disaster that would have wiped out any other tree. Fire destroyed one side of it, and ate away its heart. Of the huge bole there remained hardly a half cylinder of sound wood and thick cinnamon-colored bark. The crown fell, but this charred fragment stood, ninety feet of hollowed stalk, still flaunting two or three scorched and ragged little limbs. It seemed merely a lopsided and ludicrous monument to departed grandeur. Surely even a forest king, in such plight, might yield without dishonor, and returning to the soil await reincarnation in another age of Big Tree life. But not the unconquerable Sequoia. Blood will tell! So long as a sound root remained, and sap still flowed, this "King" would be no less than kingly.

Mustering its diminished resources, the stricken monarch held its ground. It is the Sequoia way, if a tree

Mariposa Lily (Calochortus venustus).

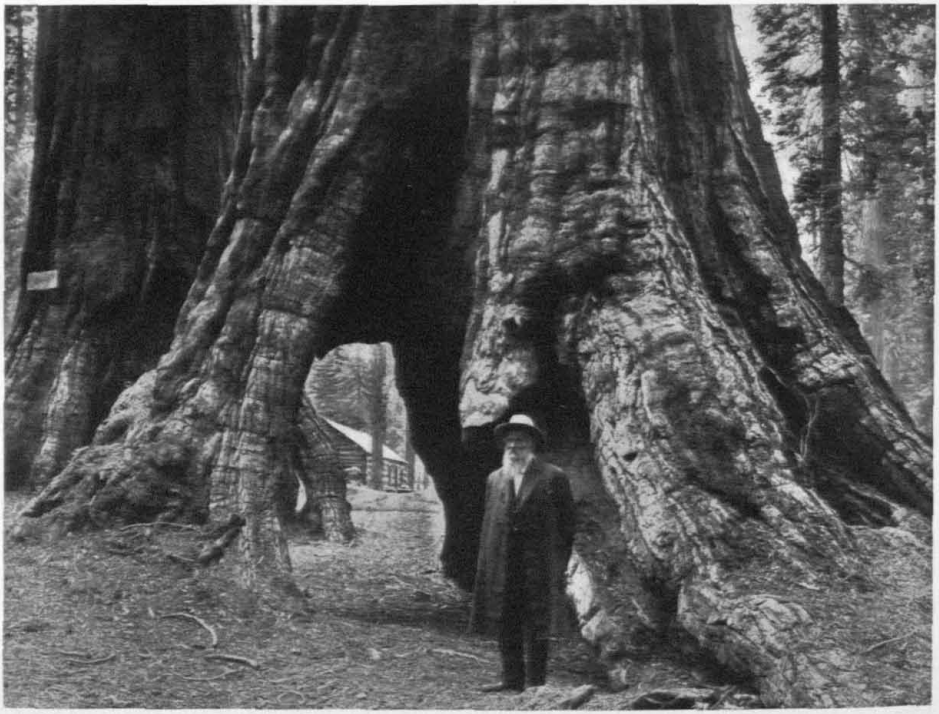
be weakened by fire, to clutch the soil more broadly than before. Thus, here, the few remaining roots were sent farther out, and new stores of nourishment drawn upon. But it must do more than feed. It is a tree's office to be beautiful. It is a king's right to wear a crown. So now the surviving



"King of the Forest," a mere shell, left by fire, of what was once the monarch of the Tuolumne Grove; now making an heroic effort to rebuild its crown, and get a new start in life. The three figures at its base show that its diameter was about thirty feet. The fine tree in the foreground below is a six-foot Red Fir (Abies magnifica).

branchlets are cheerily turning upward,—also after the habit of the species when, crushed by lightning or storm, it quickly

rebuilds its top; and one of them has already taken shape there, far aloft, as a symmetrical young tree, undaunted by adversity, and fighting for its share of air and sunshine. Thus would the living skeleton hide its shame by grace of new foliage. Here's wishing it luck! Royal endurance merits homage. Long may so kingly a forest "character" play a part in the tree world! An eminent expert, famous for his knowledge of mankind, once



Three Veterans,—the "Haverford" and "Ohio" trees in the Mariposa Grove, and Galen Clark at the age of 95. This is said to be the last picture of the celebrated "Guardian of Yosemite," who died a year later, in 1910. The "Haverford," named for the college in Pennsylvania, illustrates the Indian practice of using Big Trees as backlogs for fires. Although its core was burnt away, leaving a cavern that is reputed to have sheltered seventeen horses and their riders, its remaining roots have reached out the more stoutly for nourishment, and are supplying ample sap to stalk and crown.

declared: "Skin for skin, yea, all that a man hath will he give for his life." This Sequoia King, more than human in its tenacity, is a veritable Job of the forest. Its faith forbids death. Better to keep on growing against odds, better to live even as a misshapen cripple, showing what humble beauty it may, than to stand a black and rotting shell where once it reigned Sovereign of the Woods! Truly, it is not alone in the Forest of Arden that we

> Find tongues in trees, books in the running brooks,
> Sermons in stones.

NOTES

Transportation, Hotels, Camps, Guides, etc.—Yosemite Valley is about 150 miles due east of San Francisco. It is reached by either the Southern Pacific or the Santa Fe Railway to Merced, 145 miles by rail from San Francisco and 330 from Los Angeles; by the Yosemite Valley Railroad from Merced, 78 miles, to El Portal, just outside the National Park boundary, and by automobile stages from El Portal to Yosemite village, 12 miles. Round-trip tickets from San Francisco to Yosemite, $22.35; from Los Angeles, $31.20. Sleeping-car berths, $2.50 each way.

Del Portal, the Yosemite Valley Railroad's hotel at El Portal, is more than a stopping place on the way to Yosemite, as it offers excellent accommodations for sportsmen hunting or fishing in the near-by mountains, or tourists visiting the Merced and Tuolumne Sequoia Groves. Hotel Rates, $4.00 per day, or $22.50 per week, upwards. Automobile round trip to the Big Trees, made in one day, $7.50.

Tourist accommodations in Yosemite are provided at present by the Sentinel Hotel and three large permanent camps. While a larger and modern hotel is promised by the Park administration for the season of 1915, the Sentinel Hotel, opposite Yosemite Falls, W. M. Sell, Jr., manager, gives good service at the prices charged, $3.50 to $5.00 a day, or $23 to $30 a week; for two persons in a room, $3.00 to $4.00 a day, or $20 to $25 a week. Camp Ahwahnee is situated at the foot of Sentinel Rock. It is well managed by W. M. Sell, and offers an excellent table with clean, roomy floored tents at $3.00 to $3.75 a day, or $17.50 to $22.75 a week. Camp Lost Arrow, near the foot of Yosemite Falls, W. M. Sell, Jr., manager, is a popular resort at $2.50 a day or $15 a week.

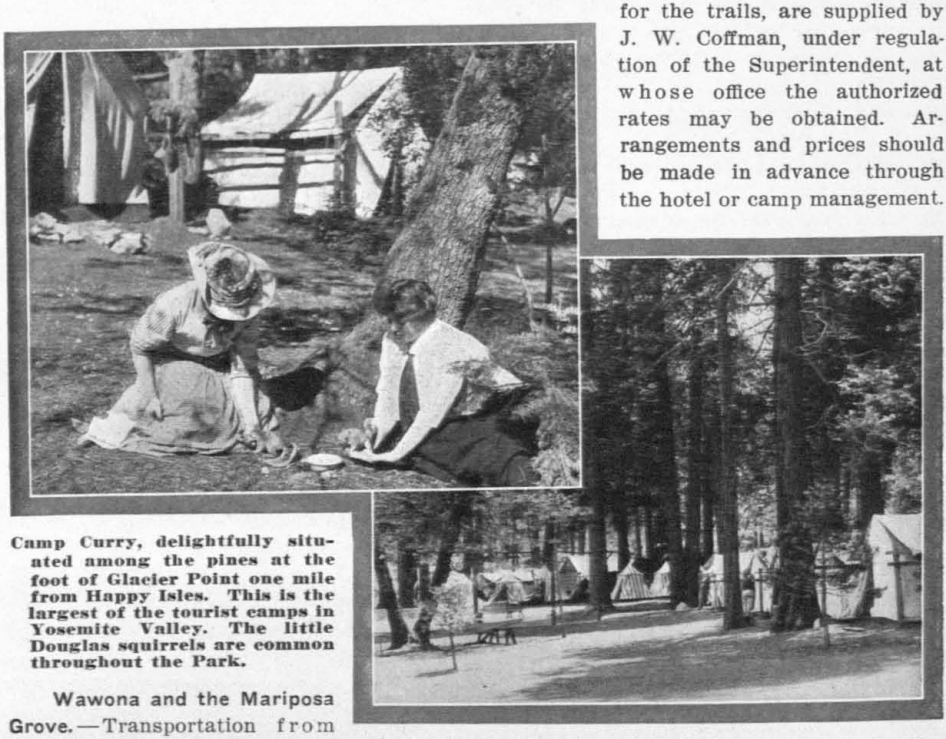
Camp Curry, D. A. Curry, proprietor, at the upper end of the valley, is the largest and best known of the camps. Its structures include offices, dining rooms, steam laundry, bakery, bath house, swimming pool, etc. Comfortable tents are provided for 1,000 guests. Rates, $2.50 a day, or $15 weekly. At Glacier Point, overlooking Yosemite and Little Yosemite, W. M. Sell, Jr., conducts a hotel and camp. Rates, $2.50 to $4.00 a day.

Free sites are designated by the Superintendent in different parts of the valley for parties wishing to establish temporary private camps. Cut firewood may be bought from the Superintendent. Tents, camp outfits, groceries and other supplies, as well as outfits

Del Portal, the Yosemite Valley Railway Company's attractive hotel at El Portal.

for High Sierra trips, are obtainable from the well-stocked general store of W. D. Thornton in Yosemite. Thornton's store is also the post office. A bakery and confectioner's shop, meat market, laundry, telegraph and express office, with several photographic and art studios, will be found in the village.

Carriages from the hotel and camps to all parts of the valley, and horses and guides for the trails, are supplied by J. W. Coffman, under regulation of the Superintendent, at whose office the authorized rates may be obtained. Arrangements and prices should be made in advance through the hotel or camp management.



Camp Curry, delightfully situated among the pines at the foot of Glacier Point one mile from Happy Isles. This is the largest of the tourist camps in Yosemite Valley. The little Douglas squirrels are common throughout the Park.

Wawona and the Mariposa Grove.—Transportation from Yosemite to Wawona, 26 miles, and thence to the Mariposa Big Tree Grove, is by the automobile stages of the Yosemite Stage and Turnpike Company. Rates, Yosemite to Wawona, $6.50, round trip, $13; Yosemite to Mariposa Grove, $7.50, round trip, $15. Transportation, Yosemite to Glacier Point by stage, via Inspiration Point and Chinquapin, $6.50 each way. At Wawona, the Wawona Hotel is one of the best kept mountain inns in America; rates from $3.50 to $4.50 a day.

Automobiles.—Automobiles are now admitted to the Park. Good roads from Stockton, Modesto and Merced, in the San Joaquin Valley, lead to the west boundary of the Park, connecting with the Coulterville and Big Oak Flat roads. Automobiles are permitted to enter the Park over either of these roads, but east of the Merced Grove they are limited to the Coulterville road as far as Big Meadows, whence they may either proceed directly to Yosemite, or take the new road via El Portal. A fee of $5.00 is charged for permit. Garage and automobile-camp sites are provided in the valley. For regulations apply to the Superintendent.

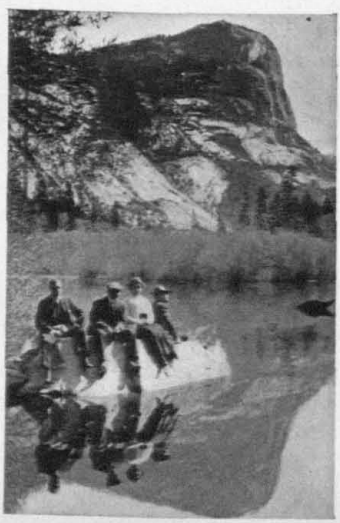
Literature.—The useful pamphlet, *General Information Regarding Yosemite National Park*, may be had gratis at the office of the Superintendent in Yosemite Village, or by mail from the Department of the Interior, Washington, D. C. It contains brief notes on the Park and its administration; altitudes, distances, trails, etc.; size of Big Trees in Mariposa Grove; rules and authorized rates of transportation; hotels, camps, and camp-

ing outfits; automobile regulations; and a bibliography of books and important magazine articles. Two other government pamphlets are for sale at the Superintendent's office: *Sketch of Yosemite National Park,* a popular account of Yosemite geology by F. E. Matthes, of the U. S. Geological Survey, price 10 cents; and *The Secret of the Big Trees,* by Ellsworth Huntington, price 5 cents. *Foley's Yosemite Souvenir,* a handy pocket guide, may be purchased at J. D. Foley's studio in the village.

Of the earlier books, Dr. L. H. Bunnell's *Discovery of Yosemite,* 1880, 4th ed., 1911, is the best account of the Indian war of 1851 and the visits of the Mariposa Battalion. The last edition is handsomely illustrated from photographs by Boysen. *In the Heart of the Sierras,* by J. M. Hutchings, 1886, is a history of the valley by one of its earliest residents. Prof. J. D. Whitney's *The Yosemite Guide-Book,* 1871, despite its obsolete theory of the valley's origin, is a very readable and informing essay. *Mountaineering in the Sierra Nevada,* 1871, by Clarence King, who was Whitney's associate in the geological survey of California, is one of the best books inspired by the mountains of the West.

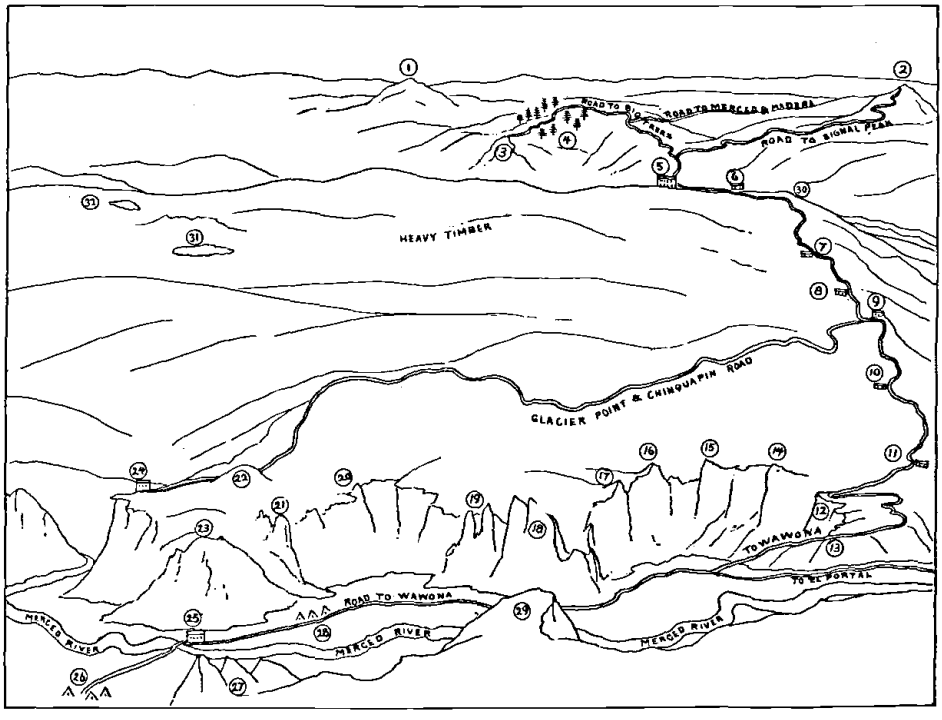
Three booklets, *Indians of Yosemite Valley,* 1904; *The Big Trees of California,* 1907; and *The Yosemite Valley,* 1910, by Galen Clark, discoverer of the Mariposa Grove and long the guardian of Yosemite under the state régime, contain much first-hand information. The fullest and most valuable description of the Park, with its glaciers, past and present; its forests, flowers, birds and animals, is of course, John Muir's *Yosemite,* 1912. Muir's other books, *My First Summer in the Sierra,* 1911; *The Mountains of California,* enlarged ed., 1913; and *Our National Parks,* 1909, are also full of Yosemite. Naturalist and geologist as he is, Mr. Muir, rather than Joaquin Miller, has been the real poet of the Sierra, though he writes in prose. His books are after all not so much treatises on its natural history as delightful interpretations of its spirit. *Yosemite Trails,* 1911, by J. Smeaton Chase, is an enjoyable account of the Yosemite uplands, especially useful on their trees and flowers. Mr. Chase's little manual, *Cone-Bearing Trees of the California Mountains,* 1911, will also be found of service.

The standard handbook on the botany of the Park is *A Yosemite Flora,* 1912, by Prof. Harvey M. Hall and Carlotta C. Hall. Untechnical in style and excellently illustrated, with keys for identifying the trees and flowers, this accurate manual is invaluable for field work. Prof. Willis Linn Jepson's *The Trees of California,* 1909, is well planned for laymen's use, and capitally illustrated. It is not to be confused with his monumental and technical *Silva of California,* published by the University of California. Supplementing these popular handbooks, Sudworth's *Forest Trees of the Pacific Slope,* 1908, published by the U. S. Forest Service, covers the Sierra forests with the same thoroughness given to the rest of its subject.



Watching the Sunrise at Mirror Lake.

The nine volumes of the *Sierra Club Bulletin* contain a store of papers by experts, covering not only the Yosemite country, but also the great mountains of the Kings and Kern River basins. These admirably edited publications, with a considerable library of other mountain literature, may be consulted at the Sierra Club's headquarters, the LeConte Memorial Lodge, near Camp Curry. In the general periodicals of this country and Europe, Yosemite and Hetch Hetchy Valleys have received more attention than any other American scenic district, and many noteworthy articles may be found through the periodical indexes and magazine files at the public libraries.



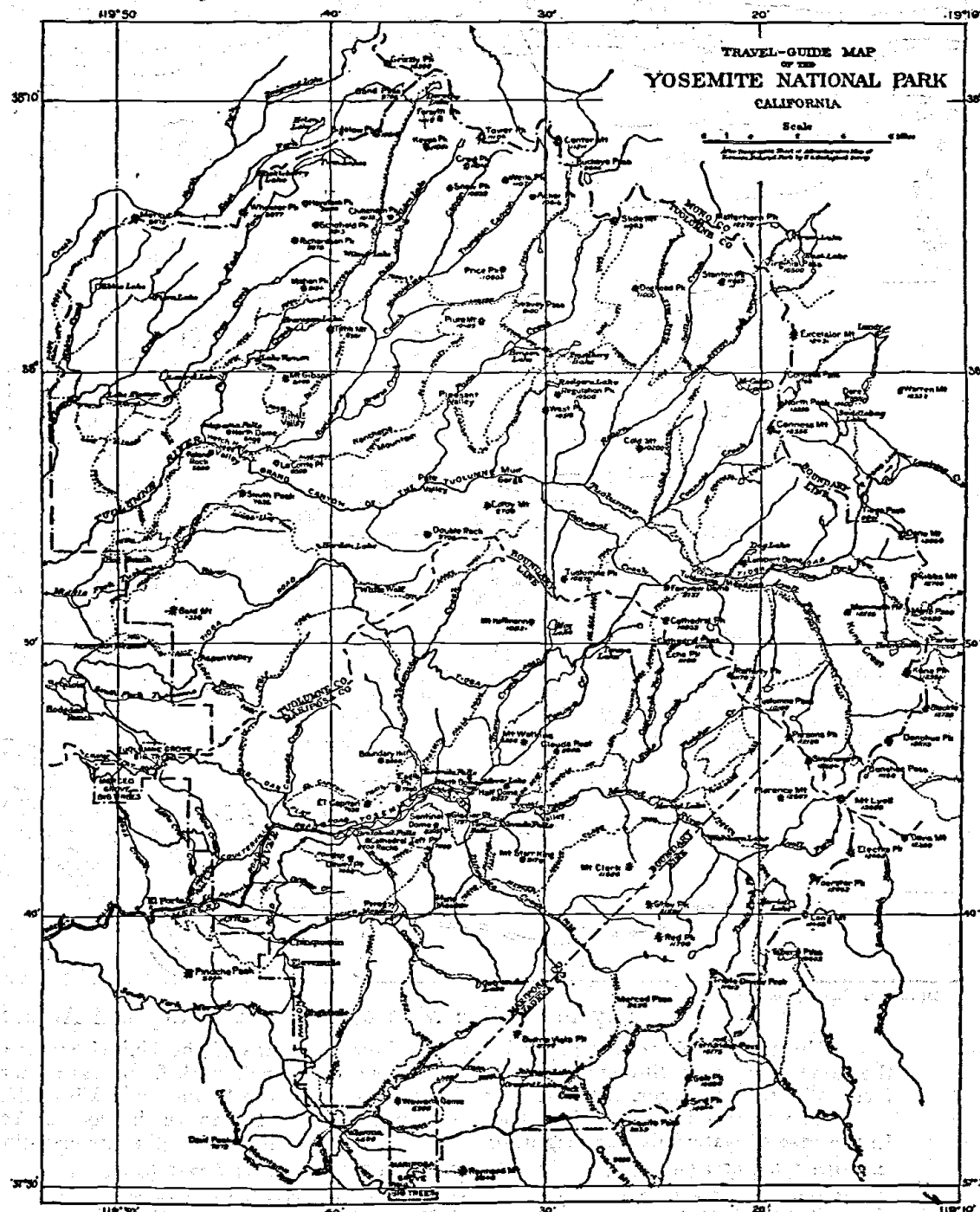
FROM YOSEMITE VALLEY TO WAWONA AND THE MARIPOSA GROVE.

1. Mt. Raymond (El. 8,548 ft.).
2. Signal Peak, or Devil Peak (7,079).
3. Wawona Point.
4. *Mariposa* Grove.
5. Wawona.
6. Fish Hatchery.
7. Eight Mile.
8. Eleven Mile.
9. Chinquapin.
10. Grouse Creek.
11. Fort Monroe.
12. Inspiration Point.
13. Artist Point.
14. Old Inspiration Point.
15. Stanford Point.
16. Crocker Point.
17. Dewey Point.
18. Cathedral Rocks.
19. Cathedral Spires.
20. Taft Point.
21. Sentinel Rock.
22. Sentinel Dome.
23. Union Point.
24. Glacier Point.
25. Sentinel Hotel, Yosemite Village.
26. Lost Arrow Camp.
27. Three Brothers.
28. Camp Ahwahnee.
29. El Capitan.
30. Lookout Point.
31. Ostrander Lake.
32. Crescent Lake.

PRESS OF
THE BLAIR-MURDOCK COMPANY
SAN FRANCISCO

INDEX

Figures in light face type refer to the text, those in heavier type to illustrations.

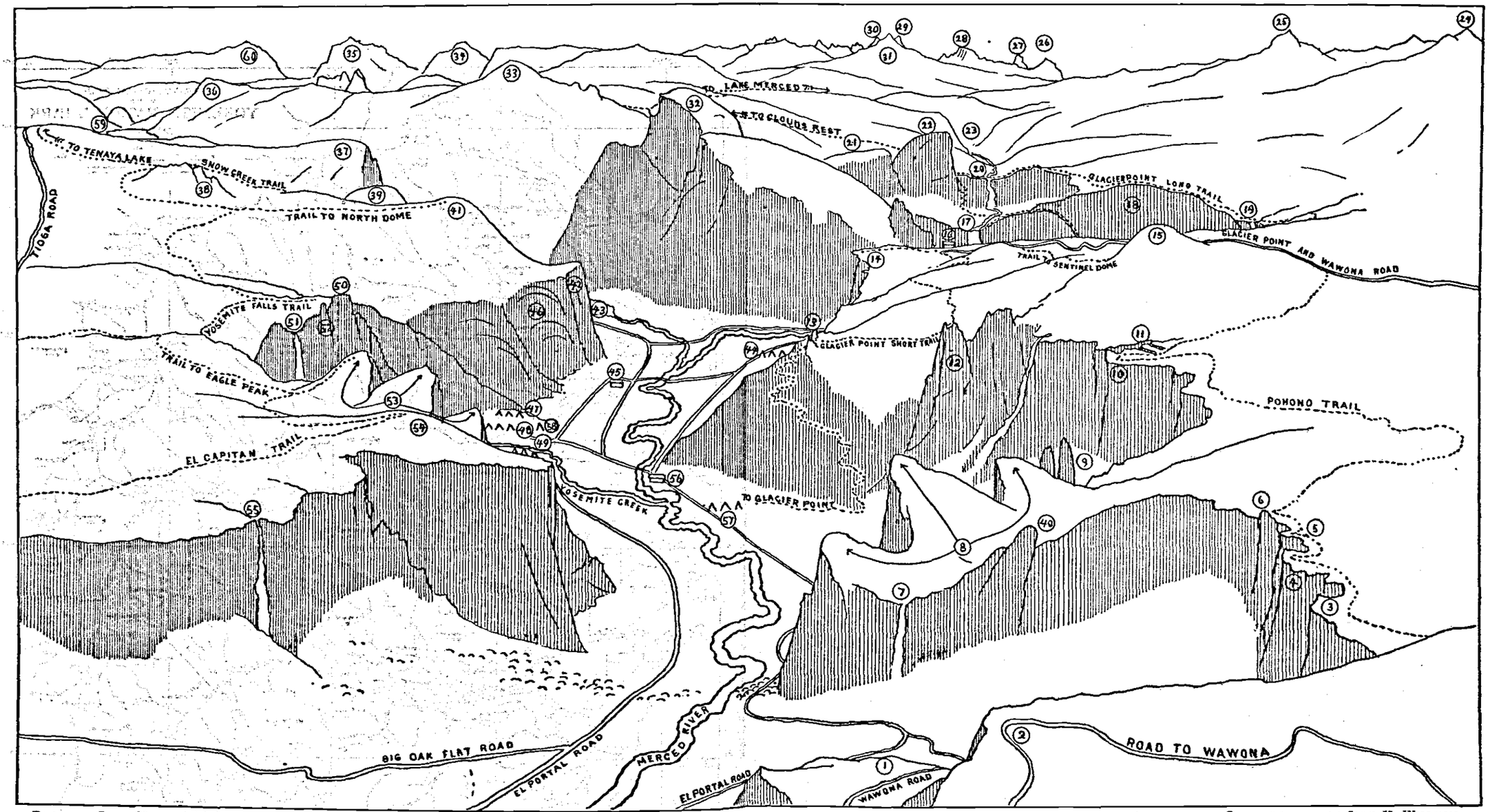


The following maps, at the prices given, may be obtained from the Director of the U. S. Geological Survey, Washington, D. C., or at the office of the Superintendent of the Park in Yosemite Village:

Map of Yosemite National Park, 28½ x 27 inches, scale 2 miles to the inch. Price, 50 cents a copy flat; 55 cents a copy folded and bound between covers.

Map of Yosemite Valley, 35 x 15½ inches, scale 2,000 feet to the inch. Price, 20 cents.

Panoramic view of Yosemite National Park, 18½ x 18 inches, scale 3 miles to the inch. Price, 25 cents.



DRAWN BY CHRIS JÖRGENSEN.

Key to Outline Map of Yosemite Valley and Adjacent Peaks, with Elevations of Principal Landmarks.

NOTE: The elevations given below are from the maps of the United States Geological Survey. These maps do not always agree one with another, and even in the same map slight differences between the legend and bench-mark figures are sometimes found. Such variations, however, are inconsiderable,—never more than a few feet. Where they occur, the authority of the latest map, the "Panoramic View of the Yosemite National Park," has as far as possible been followed.

The figures indicate height above sea-level. For height above the floor of Yosemite Valley, deduct 3,960 feet, the elevation of the pier near the Sentinel Hotel. In the case of waterfalls, the height, or "drop," of each is given, as well as its elevation above sea-level.

1. Artist Point, 4,701 feet.
2. Inspiration Point, 5,391.
3. Old Inspiration Point, 6,603.
4. Stanford Point, 6,659.
5. Crocker Point, 7,090.
6. Dewey Point, 7,316.
7. Bridal Veil Fall, top, 4,787: drop, 620.
8. Cathedral Rocks, 6,638.
9. Cathedral Spires, 6,114.
10. Taft Point, 7,503.
11. The Fissures.
12. Sentinel Rock, 7,046.
13. Union Point, 6,314.
14. Glacier Point, 7,214.
15. Sentinel Dome, 8,117.
16. Glacier Point Hotel.
17. Vernal Fall, top, 5,049: drop, 317.
18. Panorama Cliff, 6,224.
19. Illilouette Fall, top, 5,816: drop, 370.
20. Nevada Fall, top, 5,910: drop, 594.
21. Mt. Broderick, 6,705.
22. Liberty Cap, 7,072.
23. Little Yosemite, 6,150.
24. Mt. Starr King, 9,131.
25. Mt. Clark, 11,500.
26. Foerster Peak, 12,062.
27. Electra Peak, 12,462.
28. Rodgers Peak, 13,006.
29. Mt. Lyell, 13,090.
30. Mt. McClure.
31. Mt. Florence, 12,507.
32. Half Dome, 8,852.
33. Clouds Rest, 9,924.
34. Parker Peak, 12,850.
35. Gibbs Mountain, 12,700.
36. Tenaya Peak, 10,200.
37. Mt. Watkins, 8,235.
38. Indian Rock, 8,526.
39. Basket Dome, 7,602.
40. Leaning Tower, 5,863.
41. North Dome, 7,531.
42. Washington Column, 5,912.
43. Mirror Lake, 4,096.
44. Camp Curry.
45. Kennyville.
46. Royal Arches, 5,500.
47. Indian Camp.
48. Camp Lost Arrow.
49. Camp Yosemite (Military).
50. Yosemite Point, 6,935.
51. Yosemite Falls: Top of Upper Fall, 6,525: drop, 1,430. Top of Lower Fall, 4,420: drop, 320.
52. Lost Arrow.
53. Three Brothers, 7,773 (Eagle Peak).
54. El Capitan: Brow, 7,042: summit, 7,564.
55. Ribbon Fall, top, 7,008: drop, 1,612.
56. Sentinel Hotel. Yosemite Village, 3,964.
57. Camp Ahwahnee.
58. Garage.
59. Lake Tenaya, 8,146.
60. Dana Mountain, 13,050.