John Muir (1838-1914)

Selection of Writings

- "The Hetch Hetchy Valley," *Boston Weekly Transcript*, March 25, 1873 .....(1)
  http://www.yosemite.ca.us/john_muir_writings/muir_hetch_hetchy_boston_25mar1873.html
- "Features of the Proposed Yosemite National Park," *The Century Magazine*, Vol. XL. September, 1890. No. 5 .....(6)
  http://www.yosemite.ca.us/john_muir_writings/features_of_the_proposed_yosemite_national_park/
- "The Treasures of the Yosemite," *The Century Magazine*, Vol. XL. August, 1890. No. 4 .....(16)
  http://www.yosemite.ca.us/john_muir_writings/the_treasures_of_the_yosemite/
- "A Wind-storm in the Forests," *The Mountains of California* (1894) .....(29)
  http://www.yosemite.ca.us/john_muir_writings/the_mountains_of_california/chapter_10.html
- "The Earthquake," *Our National Parks* (1901).....(33)
  http://www.yosemite.ca.us/john_muir_writings/the_earthquake.html
- "The Hetch Hetchy Valley," *Sierra Club Bulletin*, Vol. VI, No. 4, January, 1908 .....(35)
  http://vault.sierraclub.org/ca/hetchhetchy/hetch_hetchy_muir_scb_1908.html
- "Mount Ritter," *The Mountains of California* (1911).....(41)
  http://www.yosemite.ca.us/john_muir_writings/mount_ritter.html
- "Wild Wool," *Steep Trails* (1918) .....(44)
  http://www.yosemite.ca.us/john_muir_writings/steep_trails/chapter_1.html
- "Save the Redwoods," *Sierra Club Bulletin*, Volume XI Number 1 - January, 1920.....(48)
  http://www.yosemite.ca.us/john_muir_writings/save_the_redwoods.html

John Muir: A Brief Biography .....(51)
http://vault.sierraclub.org/john_muir_exhibit/life/muir_biography.aspx

John Muir Writings

The Hetch Hetchy Valley

by John Muir

Boston *Weekly Transcript,* March 25, 1873

Note: The following article is Muir's first essay on Hetch hetchy. Although it shares the same title as Chapter 16 of Muir's 1912 book, The Yosemite, and that of an earlier 1908 Sierra Club Bulletin article, this essay is quite different from Muir's other writings on Hetch Hetchy. It tells the story of his first visit into Hetch Hetchy Valley during the fall of 1872. Published March 25, 1973, this was the fourth of his newspaper columns to appear in print.

Hetch Hetchy is one of a magnificent brotherhood of Yosemite Valleys, distant from Yosemite Valley, so-called, eighteen or twenty miles in a northwesterly direction, but by the only trail the distance is not less than forty miles.

In the first week of last November, I set out from here on an excursion of this wonderful valley. My "proper route" was by the Big Oak Flat road as far as Hardin's Mills, thence by a trail which mazes among rocks and chaparral, past "Wade's and the Hog Ranch," but as I never follow trails when I may walk the living granite, and as I was moreover anxious to see as much as possible of the cañons of Cascade Creek on my way, I set out straight across the mountains leaving Yosemite by Indian cañon. There was some little danger of being caught in snow thus late in the season, but as I was afoot and had no companion to fear for, I felt confident that I could force my way out of any common storm. I carried one pair of woolen blankets and three loaves of bread - I reckoned that two loaves would be sufficient for the trip, provided all went sunnily, the third was a big round extra that I called my storm loaf. In case of being snowed in, it would last me three days, or, if necessary, six days. Besides those "breads," I carried their complementary coffee and a two-ounce mug of the Fray Bentos Extracum Carnis of Baron Liebig. Thus grandly allowanced, I was ready to enjoy my ten days' journey of any kind of calm or storm.

On reaching the top of Indian Cañon I bore off to the left, crossed Yosemite Creek about a mile back of the falls, and slanted up the side of El Capitan Mountain towards the gap, through which the mono trail passes. By the time I reached the summit it was sundown, and as I found an old friend of a brooklet still living, and plenty of dry logs, I concluded to camp, that is, to set fire to a log and cut an armful of pine or fir branches for a bed.

Most of the next day was spent in crossing parallel rows of ice-polished cañons belonging to the basin of Cascade Creek. Nigh overtook mein a magnificent grove of silver fir, in which I camped.

Next morning, after climbing a long timbered slope and crossing a few groove-shaped valleys I came upon the precipitous

rim of the great Tuolumne Cañon, a mile or two above Hetch Hetchy. I had explored a few miles of the central portion of this stupendous cañon in one of my former excursions. It is a Yosemite Valley in depth and in width, and is over twenty miles in length, abounding in falls and cascades, and glacial rock forms. Hetch Hetchy is only an expanded lower portion of this vast Yosemite. The view from my first standpoint is one of the very grandest I ever beheld. From the great cañon as a sort of base line, extends a most sublime map of mountains rising gradually higher, dome over dome, crest over crest, to the summit of the range, and the whole glorious engraving is reposed at such an angle that you look full upon its surface near and far. To one unacquainted with the hidden life and tenderness of the high sierra, the first impression is one of intense soul-crushing desolation. Robert Burns described the Scottish Highlands as "a country where savage streams tumble over savage mountains," and nothing but the same (outside) savageness and confusion is apparent here. Castaway heaps of dead, broken mountains outspread, cold and gray, like a storm sky of winter. But, venture to the midst of these bleached mountain bones — dwell with them, and every death taint will disappear, you will find them living joyously, with lakes, and forests, and a thousand flowers, their hardest domes pulsing with life, breathing in atmospheres of beauty and love.

After I had carefully scanned a mile or two of the cañon wall I discovered a curve that seemed climbable all the way to the bottom, which I concluded to test. After I had descended two or three hundred yards, I struck a well-worn trail that mazed down to the cañon just where I wished to go. At first I took it to be an Indian trail, but after following it a short distance, I discovered certain hieroglyphics which suggested the possibility of its belonging to the bears. It was plain that a broadfooted mother and a family of cubs had been the last to pass over it.

It is dangerous to come suddenly upon an affectionate family of bears, but this seldom happens, if one walks noisily, for bears have excellent ears, and they are acquainted with caves and thickets, to which they gladly retire for the sake of peace.

A little below this discovery of paws, I was startled by a noise close in front. Of course in so grizzly a place, the noise was speedily clothed upon by a bear skin, but it was only the bounding of a frightened deer which I had cornered, and compelled to make a desperate leap in order to pass me. In its hurried flight up the mountain, it started several heavy boulders, that came crashing and thumping uncomfortably near.

A little further on, I came to a most interesting group of glacial records, which led me away from the trail to the edge of a sheer precipice, which, by comparison with my recollections of those of Yosemite, must be betwixt two and three thousand feet in depth. Peering cautiously over the wall, I noticed a narrow ledge fringed with dwarf live oaks, which I made out to reach; my hope was, that by following this ledge along the face of the wall I would strike my neighbor's highway, in which I had full confidence, believing that I could climb any rock that a bear could. But it soon proved that this was not unconditionally true, for in scrambling through the brush fringe of my narrow way, I observed a solitary bear track; the rugged author of those broad prints had gone in the same direction as I was going, and there was no return track. This made me more hopeful than before of being able to creep along the wall to the main traveled road,but the track appeared fresh, and the possibility of meeting long claws upon so conquer-or-die a place made me uneasy. I moved forward with great caution until I came to a recess where a few trees were anchored. Here I found that my pioneer had climbed to a sloping place on the wall above, by a dead pine that leaned against it like a ladder. Had I been empty handed like him I would have followed by the same way, but my blankets encumbered my limbs and kept them out of balance. A little farther on I was positively halted by a sheer wall, and my hour's scramble in this direction, so far as getting to the bottom was concerned, was worse than useless. Escaping from this rigid bench by the same way as I found it, I made out to zigzag down a fissured portion of the wall to another bushy seam, still hoping to reach the bear road by creeping along the face of the rock, but this second shelf terminated like the first. I was now tired of cut-offs, and decided to seek my way back up the mountain to where I first wandered from the trail. In groping through brush and fissures I found a rock cup which contained a few quarts of water, and as it was now past noon, and there was a flat place close by where I could unroll my blankets, I made a fire with chaparral twigs, and boiled a tin cupful of coffee. After dining and resting upon this lofty rock table, I continued my return climb up the rocks at a slow pace, careful to avoid thirst, in case I might be compelled to pass the night on the mountain without water. However, I encountered no extraordinary difficulties, and by two or three o'clock was safe in Bear Cañon, with fair prospects of reaching the bottom before dark. I was no on a good road and I made fast time, careful always to make abundance of admonitory noise for the benefit of Mother Bruin and her muffy cubs.

They followed the windings of the trail, in Indian file, with great fidelity, scraping it clear of sticks and pine needles, at steep places, where they had been compelled to adopt a shuffling gait to keep from rolling head over heels. Thin crumbs of dirt, around the edges of their tracks, were still moist. I could not help thinking, at times, that so remarkably well worn and well directed a trail must formerly have belonged to the Indians; but on reaching a long slope of debris, near the bottom of the cañon, it suddenly branched and melted out in all directions into densest thickets of chaparral, as Indian trails never do, and when at length I touched bottom on the level cañon floor, so good a highway was easily accounted

for. Here are fine groves of black oak, and the ground was brown with acorns. At the upper end of the road are extensive fields of manzanita bushes, which yield the berried of which they are so fond; a manzanita orchard at one terminus, an acorn orchard at the other. It was plain that I had near neighbors, but they caused no alarm, as they never choose to eat men where acorns are plentiful.

I selected a camping ground near the river, in the middle of a close group of cedars, whose lower boughs drooped to the ground. I cut off some of their flat, spicy plumes for a bed, gathered a store of wood, and made a cordial fire, and was at home in this vast unhandselled Yosemite. Night gathered, in most impressive repose; my blazing fire illumined the grand brown columns of my compassing cedars and a few withered briers and goldenrods that leaned forward between them, as if eager to drink the light. Stars glinted here and there through the rich plumes of my ceiling, and in front I could see a portion of the mighty cañon walls, dark against the sky, making me feel as if at the bottom of a sea. Few sounds reached me, excepting a few broken scraps of song from distant cascades. My weariness and the near soothing hush of the river made me drowsy. The breath of my cedar pillow was delicious, and I quickly drifted deep into the land of sleep.

Next morning I was up betimes, ate my usual crust, and stared down the river bank to Hetch Hetchy, which I reached in about an hour. Hetch Hetchy bears are early risers, for they had been out in the open valley printing the hoar frost before I arrived.

This valley is situated on the main Tuolumne River, just as Yosemite is on the Merced. It is about three miles in length, with a width varying from an eighth to half a mile; most of its surface is level as a lake, and lies at an elevation of 3800 feet above the sea. Its course is mostly from east to west, but it is bent northward in the middle like Yosemite. At the end of the valley the river enters a narrow cañon which cannot devour spring floods sufficiently fast to prevent the lower half of the valley from becoming a lake. Beginning at the west end of the valley where the Hardin trail comes in, the first conspicuous rocks on the right are a group like the Cathedral Rocks of Yosemite, and occupying the same relative position to the valley. The lowest member of the group which stands out well isolated above, exactly like the corresponding rock of the Yosemite group, is, according to the State geological survey, about 2270 feet in height. The two higher members are not so separate as those of Yosemite. They are best seen from the top of the wall a mile or two farther east. On the north side of the valley there is a vast perpendicular rock front 1800 feet high, which resembles El Capitan of Yosemite. In spring a large stream pours over its brow with a clear fall of at least one thousand feet. East of this, on the same side, is the Hetch Hetchy Fall, occupying a position relative to the valley like that of Yosemite Fall. It is about seventeen hundred feet in height, but not in one unbroken fall. It is said to have a much larger body of water than the Yosemite Fall, but at the time of my visit (November), it was nearly dry. The wall of the valley above this fall has two benches fringed with liveoak, which correspond with astonishing minuteness to the benches of the same relative portion of the Yosemite wall.

At the upper end of the valley a stream comes in from the northwest which is large enough to be considered a fork of the river. Its cañon is exceedingly rich in rock forms, of which a good view may be had from the south side of the valley. The surface of Hetch Hetchy is diversified with groves and meadows in the same manner as Yosemite, and the trees are identical in species. The dryer and warmer portions have fine groves of the black oak (Quercus sonomensis) with a few sugar pines (P. lambertiania). The Sabine pine (P. sabiniana) which grows on the north side of the valley in sun-beaten rocks, is not found in Yosemite. Upon the debris slopes, and in the small side cañons of the south wall, dwell the two silver first (Picea amabilis and grandis). The white cedar (Libocedrus decurrens) and Douglas spruce (Abies douglasii) are noble trees and pretty generally distributed throughout the valley. Thickets of azalea and the brier rose are common and extensive tracts along the edges of the meadows are covered with the common bracken (Pteris aquilina). I measured several specimens of this fern that exceeded eight feet in height, and the fissured walls of the valley, from top to bottom, abound in tufted rock ferns of rare beauty, which we have not space to enumerate. The crystal river glides between sheltering groves of alder and poplar and flowering dogwood. Where there is a few inches of fall it ripples and sparkles songfully, but it flows gently in most places, often with a lingering expression, as if half inclined to become a lake. Many of these river nooks are gloriously bordered with ferns and sedges and drooping willows; some were enlivened with ducks that blended charmingly into the picture, only it seemed wonderful that mountain water, so pure and so light like, could be sufficiently substantial to float a duck.

It is estimated that about 7000 persons have seen Yosemite. If this multitude were to be gathered again, and set down in Hetch Hetchy perhaps less than one percent of the whole number would doubt their being in Yosemite. They would see rocks and waterfalls, meadows and groves, of Yosemite size and kind, and grouped in Yosemite style. Amid so vast an assemblage of sublime mountain forms, only the more calm and careful observers would be able to fix upon special differences.

The trail from Hardin's enters the valley on the south side, upon a slope which corresponds to that upon which the Mariposa trail enters Yosemite. It was made by the well-known hunter "Joe Screech" for the purpose of driving stock into

the meadow. The whole valley is at present claimed by the "Smith brothers" as a summer sheep range. Sheep are driven into Hetch Hetchy ever spring, about the same time that a nearly equal number of tourists are driven into Yosemite; another coincident which is remarkably suggestive.

We have no room here to discuss the formation of this valley; we will only state as our opinion that it is an inseparable portion of the great Glacier Cañon of the Tuolumne, and that its level bottom is one of a chain of lake basins extending throughout the cañon, which have been no great time ago filled up with glacial drift. The Yosemite Valley is a cañon of exactly the same origin.

Mr. Screech first visited this valley in the year 1850, one year before Yosemite was entered by Captain Boling and his party. At present there are a couple of shepherds' cabins and a group of Indian huts in the valley, which I believe is all that will come under the head of improvements.

In returning to Yosemite, I left the valley by the trail, which I followed a few miles, then turned southward, intending to cross the head cañons of the south and middle forks of the Tuolumne to Tamarac, thence to drift along the north side of Yosemite and dive to the lower world of home by some one of the side cañons.

Shortly after I had gained the summit of the divide between the main river and the middle fork, the sky, which had been growing dark and opaque all the forenoon, began to yield snowflakes. I at once hastened to a sheltered hollow which was groved with firs and watered by a tiny brook. I searched until I found a place where a number of large trees had fallen, which in case the storm should be severe would afford abundance of fire. At the stump of one of these trees, which had splintered in falling, I found plenty of laths from two to ten feet long, with which I could make a hut, but I had not sufficient time, as the snow began to fall fast. Beneath one of my fire logs I hastily burrowed a sort of bear's nest, and lined it with branchlets of fir - that was home. Then I gathered up a large pile of dry limbs in my front yard, and made a fire before the door, and boiled a cup of coffee, and went into the house. The storm was earnest, and I most intensely enjoyed its growing magnificence.

Towards night the wind,which had been making grand songs in the fir tops and upon the edges of the hollow, began to slacken, the flakes came softly, in a sauntering mood. It seemed as if snow dust were falling from the forest ceiling, and that I had crept beneath a straw on the floor.

It was delightful to lie and look out from my ample windows to the forest. Scores of firs in my front yard were over 200 feet in height. How nobly and unreservedly they gave themselves to the storm. Heart and voice, soul and body, sang to the flowering sky, each frond tip seemed to bestow a separate welcome to every ward of the wind, and to every snowflake as they arrived. How perfectly would the pure soul of Thoreau have mingled with those glorious trees, and he would have been content with my log house. I did not expect company in such unfavorable weather; nevertheless I was visited towards evening by a brown nugget of a wren. He came in, without knocking, by the back door, which, happily, he found high enough for his upslanted tail. He nodded, mannerly enough, when he reached the middle of the floor, and I invited him to stay over night. He made no direct reply; but judging from his fussy gestures around my boots, I thought he intended lodging beneath them, or in one of the legs. I crumbled bread for him, but he had already dined in his own home, and required none of my clumsy cares.

The night became cold, and I had frequently to rise to mend my fire. Towards midnight the stars shone out, and I no longer planned concerning a snowbound. Only a few inches of snow had fallen, just sufficient to droop the whorled branches of the firs, and felt a smooth cloth for the ground.

Morning came to the snow-blossomed mountains in most surpassing splendor. The forest was one dazzling field of snow-flowers, and the ground was silvered and printed like a photographer's plate, with trees and groves and all their life. Before I had gone a hundred and fifty yards from my fire I cam upon the tracks of a herd of deer that had been feeding on the branches of the ceanothus. Deer were exceedingly abundant all the way to Tamarac. In many place the ground was broidered with the footprints of foxes, squirrels, coyotes, etc.

I found that the cañons of the middle and south forks of the Tuolumne were very deep and numerous, and by the time I reached Tamarac I was glad to camp. On the sixth day of this excursion I rambled along the edge of Yosemite, and at night swooped to the bottom and home. Thus easily and safely may we mingle ourselves with the so-called frightful rocks and bears of the two Yosemites of Tuolumne and Merced.

Tourists who can afford the time ought to visit Hetch Hetchy on their way to or from Yosemite. The trail from Hardin's will be found as good as mountain trails usually are, and it certainly is worth while riding a few miles out of a direct course to assure one's self that the world is so rich as to possess at least two Yosemites instead of one.

John Muir Writings

Features of the Proposed Yosemite National Park

The Century Magazine, Vol. XL. September, 1890. No. 5

Big Tuolumne Meadows with Mount Dana and Mount Gibbs, from near the Soda Springs.

THE upper Tuolumne Valley is the widest, smoothest, most serenely spacious, and in every way the most delightful summer pleasure park in all the high Sierra. And since it is connected with Yosemite by two good trails, and with the levels of civilization by a broad, well-graded carriage-road that passes between Yosemite and Mount Hoffman, it is also the most accessible. It lies in the heart of the high Sierra at a height of from 8500 to 9000 feet above the level of the sea, at a distance of less than ten miles from the northeastern boundary of the Yosemite reservation. It is bounded on the southwest by the gray, jagged, picturesque Cathedral range, which extends in a south-easterly direction from Cathedral Peak to Mount Lyell and Mount Ritter, the culminating peaks of the grand mass of icy mountains that form the "crown of the Sierra"; on the northeast, by a similar range or spur, the highest peak of which is Mount Conness; on the east, by the smooth, majestic masses of Mount Dana, Mount Gibbs, Mount Ord, and others, nameless as yet, on the axis of the main range; and on the west by a heaving, billowy mass of glacier-polished rocks, over which the towering masses of Mount Hoffman are seen. Down through the open sunny levels of the valley flows the bright Tuolumne River, fresh from many a glacial fountain in the wild recesses of the peaks, the highest of which are the glaciers that lie on the north sides of Mount Lyell and Mount McClure.

Along the river are a series of beautiful glacier meadows stretching, with but little interruption, from the lower end of the valley to its head, a distance of about twelve miles. These form charming sauntering grounds from which the glorious mountains may be enjoyed as they look down in divine serenity over the majestic swaths of forest that clothe their bases. Narrow strips of pine woods cross the meadow-carpet from side to side, and it is somewhat roughened here and there by groves, moraine boulders, and dead trees brought down from the heights by avalanches; but for miles and miles it is so

smooth and level that a hundred horsemen may ride abreast over it.

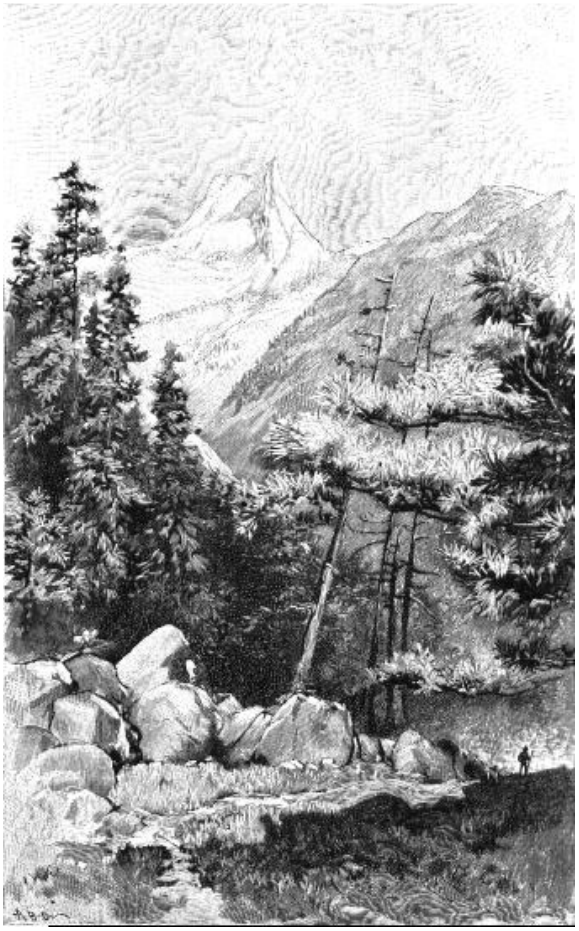
The main lower portion of the meadow is about four miles long and from a quarter to half a mile wide; but the width of the valley is, on an average, about eight miles. Tracing the river we find that it forks a mile above the Soda Springs, which are situated on the north bank opposite the point where the Cathedral trail comes in—the main fork turning southward to Mount Lyell, the other eastward to Mount Dana and Mount Gibbs. Along both forks strips of meadow extend almost to their heads. The most beautiful portions of the meadows are spread over lake basins, which have been filled up by deposits from the river. A few of these river-lakes still exist, but they are now shallow and are rapidly approaching extinction. The sod in most places is exceedingly fine and silky and free from rough weeds and bushes; while charming flowers abound, especially gentians, dwarf daisies, ivesias, and the pink bells of dwarf vaccinium. On the banks of the river and its tributaries Cassiope and Bryanthus may be found where the sod curls over in bosses, and about piles of boulders. The principal grass of these meadows is a delicate Calamagrostis with very slender leaves, and when it is in flower the ground seems to be covered with a faint purple mist, the stems of the spikelets being so fine that they are almost invisible, and offer no appreciable resistance in walking through them. Along the edges of the meadows beneath the pines and throughout the greater part of the valley tall ribbon-leaved grasses grow in abundance, chiefly Bromus, Triticum, and Agrostis.

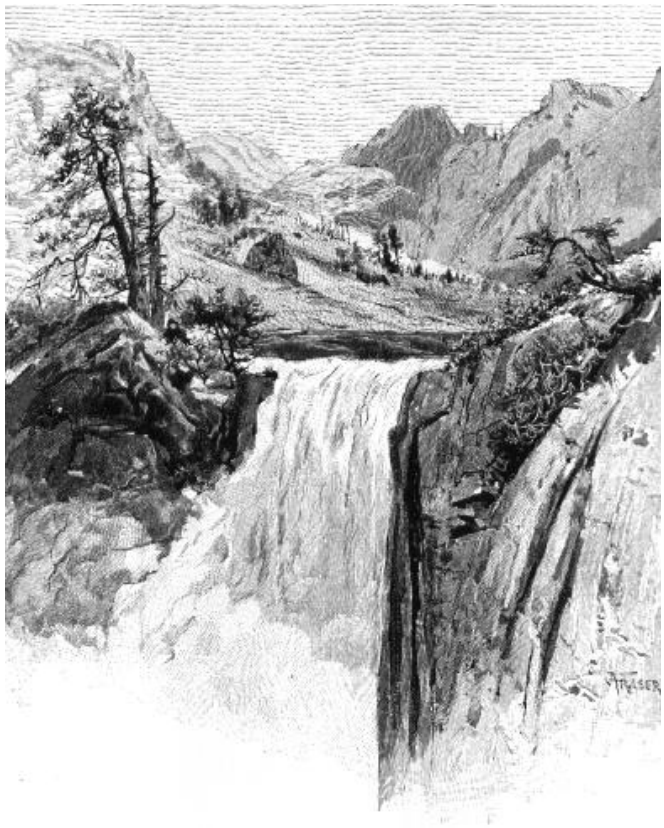
In October the nights are frosty, and then the meadows at sunrise, when every leaf is laden with crystals, are a fine sight. The days are warm and calm, and bees and butterflies continue to waver and hum about the late-blooming flowers until the coming of the snow, usually late in November. Storm then follows storm in close succession, burying the meadows to a depth of from ten to twenty feet, while magnificent avalanches descend through the forests from the laden heights, depositing huge piles of snow mixed with uprooted trees and boulders. In the open sunshine the snowy lasts until June, but the new season's vegetation is not generally in bloom until late in July. Perhaps the best time to visit this valley is-in August. The snow is then melted from the woods, and the meadows are dry and warm, while the Weather is mostly sunshine, reviving and exhilarating in quality; and the few clouds that rise and the showers they yield are only enough for freshness, fragrance, and beauty.

The groves about the Soda Springs are favorite camping-grounds on account of the pleasant-tasting, ice-cold water of the springs, charged with carbonic acid, and because of the fine views of the mountains across the meadow—the Glacier Monument, Cathedral Peak, Cathedral Spires, Unicorn Peak, and their many nameless companions rising in grand beauty above a noble swath of forest that is growing on the left lateral moraine of the ancient Tuolumne Glacier, which, broad and deep and far-reaching, exerted vast influence on the scenery of this portion of the Sierra. But there are fine camping-grounds all along the meadows, and one may move from grove to grove every day all summer enjoying a fresh home and finding enough to satisfy every roving desire for change.

Tuolumne Meadows, looking south. Unicorn Peak and Cathedral Peak.

There are four capital excursions to be made from here—to the summits of Mounts Dana and Lyell; to Mono Lake and the volcanoes, through Bloody Cañon; and to the great Tuolumne Cañon as far as the foot of the main cascades. All of these are glorious, and sure to be crowded with joyful and exciting experiences; but perhaps none of them will be remembered with keener delight than the days spent in sauntering in the broad velvet lawns by the river, sharing the pure air and light with the trees and mountains, and gaining something of the peace of nature in the majestic solitude.





View of Cathedral Peak from the west, above Lake Tenaya. View of a part of the Grand Cascades, Big Tuolumne Cañon.

The excursion to the top of Mount Dana is a very easy one; for though the mountain is 13,000 feet high, the ascent from the west side is so gentle and smooth that one may ride a mule to the very summit. Across many a busy stream, from meadow to meadow, lies your flowery way, the views all sublime; and they are seldom hidden by irregular foregrounds. As you gradually ascend, new mountains come into sight, enriching the landscape; peak rising above peak with its individual architecture, and its masses of fountain snow in endless variety of position and light and shade. Now your attention is turned to the moraines, sweeping in beautiful curves from the hollows and cañons of the mountains, regular in form as railroad embankments, or to the glossy waves and pavements of granite rising here and there from the flowery sod, polished a thousand years ago and still shining. Towards the base of the mountain you note the dwarfing of the trees, until at a height of about 11,000 feet you find patches of the tough white-barked pine pressed so flat by the ten or twenty feet of snow piled upon them every winter for centuries that you may walk over them as if walking on a shaggy rug. And, if curious about such things, you may discover specimens of this hardy mountaineer of a tree, not more than four feet high and about as many inches in diameter at the ground, that are from two hundred to four hundred years old, and are still holding on bravely to life, making the most of their short summers, shaking their tasseled needles in the breeze right cheerily, drinking the thin sunshine, and maturing their fine purple cones as if they meant to live forever. The general view from the summit is one of the most extensive and sublime to be found in all the range. To the eastward you gaze far out over the hot desert plains and mountains of the "Great Basin," range beyond range extending with soft outlines blue and purple in the distance. More than six thousand feet below you lies Lake Mono, overshadowed by the mountain on which you stand. It is ten miles in diameter from north to south and fourteen from east to west, but appears nearly circular, lying bare in the treeless desert like a disk of burnished metal, though at times it is swept by storm-winds from the mountains and streaked with foam. To the south of the lake there is a range of pale-gray volcanoes, now extinct, and though the highest of them rise nearly two thousand feet above the lake, you can look down into their well-defined circular, cup-like craters, from which, a comparatively short time ago, ashes and cinders were showered over the surrounding plains and glacier-laden mountains.

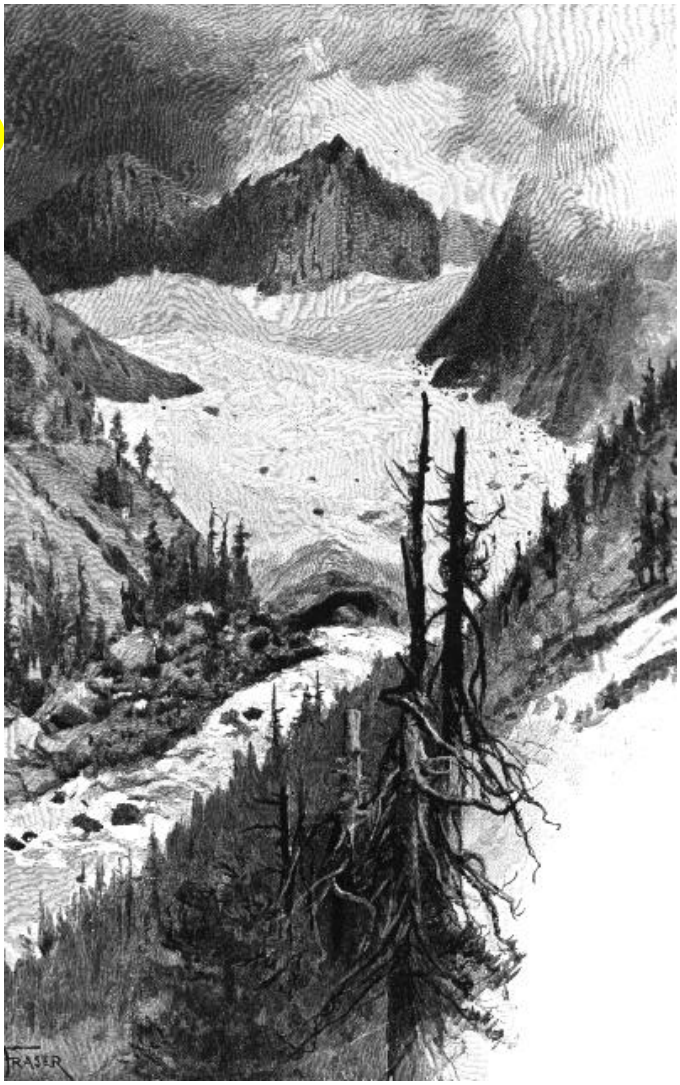
To the westward the landscape is made up of gray glaciated rocks and ridges, separated by a labyrinth of cañons and darkened with lines and broad fields of forest, while small lakes and meadows dot the foreground. Northward and southward the jagged peaks and towers that are marshaled along the axis of the range are seen in all their glory, crowded

together in some places like trees in groves, making landscapes of wild, extravagant, bewildering magnificence, yet calm and silent as the scenery of the sky.

Some eight glaciers are in sight. One of these is the Dana Glacier on the northeast side of the mountain, Iying at the foot of a precipice about a thousand feet high, with a lovely pale-green lake in the general basin a little below the glacier. This is one of the many small shrunken remnants of the vast glacial system of the Sierra that once filled all the hollows and valleys of the mountains and covered all the lower ridges below the immediate summit fountains, flowing to right and left away from the axis of the range, lavishly fed by the snows of the glacial period.

In the excursion to Mount Lyell the immediate base of the mountain is easily reached on horseback by following the meadows along the river. Turning to the southward above the forks of the river you enter the Lyell branch of the valley, which is narrow enough and deep enough to be called a cañon. It is about eight miles long and from 2000 to 3000 feet deep. The flat meadow bottom is from about 300 to 200 yards wide, with gently curved margins about 50 yards wide, from which rise the simple massive walls of gray granite at an angle of about thirty-three degrees, mostly timbered with a light growth of pine and streaked in many places with avalanche channels. Towards the upper end of the cañon the grand Sierra crown comes into sight, forming a sublime and finely balanced picture, framed by the massive cañon walls. In the foreground you have the purple meadow fringed with willows; in the middle distance, huge swelling bosses of granite that form the base of the general mass of the mountain, with fringing lines of dark woods marking the lower curves, but smoothly snow-clad except in the autumn.

There is a good camping-ground on the east side of the river about a mile above. A fine cascade comes down over the cañon wall in telling style and makes fine camp music. At one place near the top careful climbing is necessary, but it is not so dangerous or difficult as to deter any climber of ordinary strength and skill, while the views from the summit are glorious. To the northward are Mammoth Mountain, Mounts Gibbs, Dana, Warren, Conness, and many others unnumbered and unnamed; to the southeast the indescribably wild and jagged range of Mount Ritter and the Minarets; southwestward stretches the dividing ridge between the North Fork of the San Joaquin and the Merced, uniting with the Obelisk or Merced group of peaks that form the main fountains of the Illilouette branch of the Merced River; and to the northwestward extends the Cathedral spur. All these spurs, like distinct ranges, meet at your feet. Therefore you look over them mostly in the direction of their extension and their peaks seem to be massed and crowded together in bewildering combinations; while immense amphitheaters cañons and subordinate masses, with their wealth of lakes, glaciers, and snow-fields, maze and cluster between them. In making the ascent in June or October the glacier is easily crossed, for then its snow mantle is smooth or mostly melted off. But in midsummer the climbing is exceedingly tedious, because the snow is then weathered into curious and beautiful blades, sharp and slender, and set on edge in a leaning position. They lean towards the head of the glacier, and extend across from side to side in regular order in a direction at right angles to the direction of greatest declivity, the distance between the crests being about two or three feet, and the depth of the troughs between them about three feet. No more interesting problem is ever presented to the mountaineer than a walk over a glacier thus sculptured and adorned.



The south side of Mount Lyell.

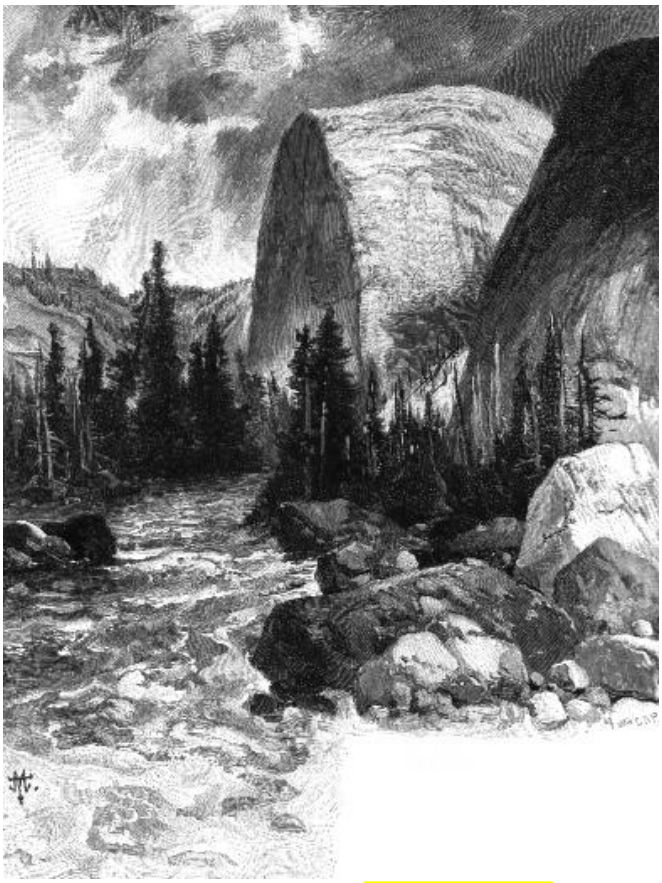
Lyell Glacier, from the edge of the Great Fissure.

The Lyell Glacier is about a mile wide and less than a mile long, but presents, nevertheless, all the more characteristic features of large, river-like glaciers—moraines, earth-bands, blue-veins, crevasses etc., while the streams that issue from it are turbid with rock-mud, showing its grinding action on its bed. And it is all the more interesting since it is the highest and most enduring remnant of the great Tuolumne Glacier, whose traces are still distinct fifty miles away, and whose influence on the landscape was so profound. The McClure Glacier, once a tributary of the Lyell, is much smaller. Eighteen years ago I set a series of stakes in it to determine its rate of motion which towards the end of summer, in the middle of the glacier, I found to be a little over an inch in twenty-four hours.

The trip to Mono from the Soda Springs can be made in a day, but Bloody Cañon will be found rough for animals. The scenery of the cañon, however, is wild and rich, and many days may profitably be spent around the shores of the lake and out on its islands and about the volcanoes.

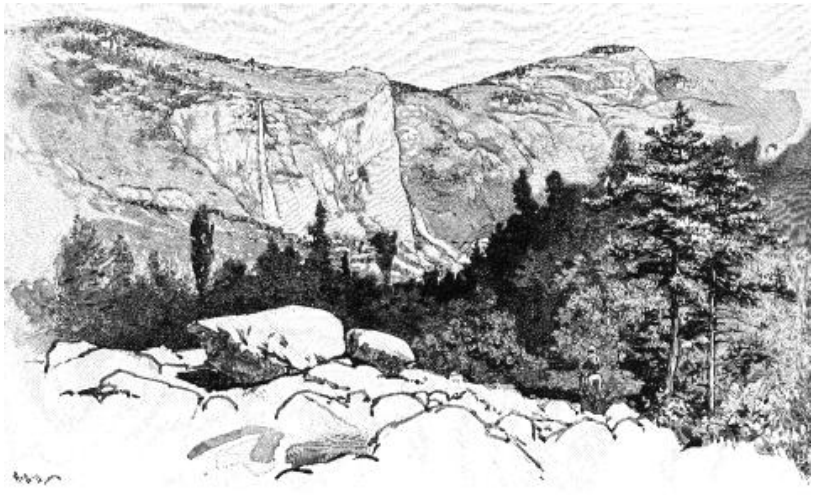
In making the trip down the Big Tuolumne Cañon animals may be led as far as a small, grassy, forested lake basin that lies below the crossing of the Virginia Creek trail. And from this point any one accustomed to walk on earthquake boulders carpeted with cañon chaparral, can easily go down the cañon as far as the big cascades and return to camp in one day. Many, however, are not able to do this, and it is far better to go leisurely, prepared to camp anywhere, and enjoy the marvelous grandeur of the place.

Looking down on Lake Tenaya.



Tuolumne River near the head of the Great Cañon.

The cañon begins near the lower end of the meadows and extends to the Hetch Hetchy Valley, a distance of about eighteen miles, though it will seem much longer to any one who scrambles through it. It is from 1200 to about 5000 feet deep, and is comparatively narrow, but there are several fine, roomy, park-like openings in it, and throughout its whole extent Yosemite features are displayed on a grand scale—domes, El Capitan rocks, gables, Sentinels, Royal Arches, glacier points, Cathedral Spires, etc. There is even a Half Dome among its wealth of rock forms, though less sublime and beautiful than the Yosemite Half Dome. It also contains falls and cascades innumerable. The sheer falls, except when the snow is melting in early spring, are quite small in volume as compared with those of Yosemite and Hetch Hetchy, but many of them are very beautiful, and in any other country would be regarded as great wonders. But it is the cascades or sloping falls on the main river that are the crowning glory of the cañon, and these in volume, extent, and variety surpass those of any other cañon in the Sierra. The most showy and interesting of the cascades are mostly in the upper part of the cañon, above the point where Cathedral Creek; and Hoffman Creek enter. For miles the river is one wild, exulting, on-rushing mass of snowy purple bloom, spreading over glacial waves of granite without any definite channel, and through avalanche taluses, gliding in silver plumes, dashing and foaming through huge boulder-dams, leaping high into the air in glorious wheel-like whirls, tossing from side to side, doubling, glinting, singing in glorious exuberance of mountain energy. Every one who is anything of a mountaineer should go on through the entire length of the cañon, coming out by Hetch Hetchy. There is not a dull step all the way. With wide variations it is a Yosemite Valley from end to end.



Entrance to Hetch Hetchy Valley from Smith Trail.

THE HETCH HETCHY VALLEY.

MOST people who visit Yosemite are apt to regard it as an exceptional creation, the only valley of its kind in the world. But nothing in Nature stands alone. She is not so poor as to have only one of anything. The explorer in the Sierra and elsewhere finds many Yosemites that differ not more than one tree differs from another of the same species. They occupy the same relative positions on the mountain flanks, were formed by the same forces in the same kind of granite, and have similar sculpture, waterfalls, and vegetation. The Hetch Hetchy Valley has long been known as the Tuolumne Yosemite. It is said to have been discovered by Joseph Screech, a hunter, in 1850, a year before the discovery of the great Merced Yosemite. It lies in a northwesterly direction from Yosemite, at a distance of about twenty miles, and is easily accessible to mounted travelers by a trail that leaves the Big Oak Flat road at Bronson's Meadows, a few miles below Crane Flat. But by far the best way to it for those who have useful limbs is across the divide direct from Yosemite. Leaving the valley by Indian Cañon or Fall Cañon, you cross the dome-paved basin of Yosemite Creek, then bear to the left around the head fountains of the South Fork of the Tuolumne to the summit of the Big Tuolumne Cañon, a few miles above the head of Hetch Hetchy. Here you will find a glorious view. Immediately beneath you, at a depth of more than 4000 feet, you see a beautiful ribbon of level a ground, with a silver thread in the middle of it, and green or yellow according to the time of year. That ribbon is a strip of meadow, and the silver thread is the main Tuolumne River. The opposite wall of the cañon rises in precipices, steep and angular, or with rounded brows like those of Yosemite, and from this wall as a base extends a fine wilderness of mountains, rising dome above dome, ridge above ridge, to a group of snowy peaks on the summit of the range. Of all this sublime congregation of mountains Castle Peak is king: robed with snow and light, dipping unnumbered points and spires into the thin blue sky, it maintains amid noble companions a perfect and commanding individuality.

You will not encounter much difficulty in getting down into the cañon, for bear trails may readily be found leading from the upper feeding-grounds to the berry gardens and acorn orchards of Hetch Hetchy, and when you reach the river you have only to saunter by its side a mile or two down the cañon before you find yourself in the open valley. Looking about you, you cannot fail to discover that you are in a Yosemite valley. As the Merced flows through Yosemite, so does the Tuolumne through Hetch Hetchy. The bottom of Yosemite is about 4000 feet above sea level, the bottom of Hetch Hetchy is about 3800 feet, and in both the walls are of gray granite and rise abruptly in precipices from a level bottom, with but little debris along their bases. Furthermore it was a home and stronghold of the Tuolumne Indians, as Ahwahne was of the grizzlies. Standing boldly forward from the south wall near the lower end of the valley is the rock Kolána, the outermost of a picturesque

Kolána Rock, Hetch Hetchy Valley.

group corresponding to the Cathedral Rocks of Yosemite, and about the same height. Facing Kolána on the north side of the valley is a rock about 1800 feet in height, which presents a bare, sheer front like El Capitan, and over its massive brow flows a stream that makes the most graceful fall I have ever seen. Its Indian name is Tu-ee-u-la-la, and no other, so far as I have heard, has yet been given it. From the brow of the cliff it makes a free descent of a thousand feet and then breaks up into ragged, foaming web of cascades among the boulders of an earthquake talus. Towards the end of summer it vanishes, because its head streams do not reach back to the lasting snows of the summits of the range, but in May and June it is indescribably lovely. The only fall that I know with which it may fairly be compared is the Bridal Veil, but it excels even that fall in peaceful, floating, swaying gracefulness. For when we attentively observe the Bridal Veil, even towards the middle of summer when its waters begin to fail, we may discover, when the winds blow aside the outer folds of spray dense comet-shaped masses shooting through the air with terrible energy; but from the top of the cliff, where the Hetch Hetchy veil first floats free, all the way to the bottom it is in perfect repose. Again, the Bridal Veil is in a shadow-haunted nook inaccessible to the main wind currents of the valley, and has to depend for many of its gestures on irregular, teasing side currents and whirls, while Tu-ee-u-la-la, being fully exposed on the open cliff, is sun drenched all day, and is ever ready to yield graceful compliance to every wind that blows. Most people unacquainted with the behavior of mountain streams fancy that when they escape the bounds of their rocky channels and launch into the air they at once lose all self-control and tumble in confusion. On the contrary, on no part of their travels do they manifest more calm self-possession. Imagine yourself in Hetch Hetchy. It is a sunny day in June, the pines sway dreamily, and you are shoulder-deep in grass and flowers. Looking across the valley through beautiful open groves you see a bare granite wall 1800 feet high rising abruptly out of the green and yellow vegetation and glowing with sunshine, and in front of it the fall, waving like a downy scarf, silver bright, burning with white sun-fire in every fiber. In coming forward to the edge of the tremendous precipice and taking flight a little hasty eagerness appears, but this is speedily hushed in divine repose. Now observe the marvelous distinctness and delicacy of the various kinds of sun-filled tissue into which the waters are woven. They fly and float and drowse down the face of that grand gray rock in so leisurely and unconfused a manner that you may examine their texture and patterns as you would a piece of embroidery held in the hand. It is a flood of singing air, water, and sunlight woven into cloth that spirits might wear.

The great Hetch Hetchy Fall, called Wa-páma by the Tuolumnes, is on the same side of the valley as the Veil, and so near it that both may be seen in one view. It is about 1800 feet in height, and seems to be nearly vertical when one is standing in front of it, though it is considerably inclined. Its location is similar to that of the Yosemite Fall, but the volume of water is much greater. No two falls could be more unlike than Wa-páma and Tu-ee-u-la-la, the one thundering and beating in a shadowy gorge, the other chanting in deep, low tones and with no other shadows about it than those of its own waters, pale-gray mostly, and violet and pink delicately graded. One whispers, "He dwells in peace," the other is the thunder of his chariot wheels in power. This noble pair are the main falls of the valley, though there are many small ones essential to the perfection of the general harmony.

The wall above Wa-páma corresponds, both in outlines and in details of sculpture, with the same relative portion of the Yosemite wall. Near the Yosemite Fall the cliff has two conspicuous benches extending in a horizontal direction 500 and 1500 feet above the valley. Two benches similarly situated, and timbered in the same way, occur on the same relative position on the Hetch Hetchy wall, and on no other portion. The upper end of Yosemite is closed by the great Half Dome, and the upper end of Hetch Hetchy is closed in the same way by a mountain rock. Both occupy angles formed by the confluence of two large glaciers that have long since vanished. In front of this head rock the river forks like the Merced in Yosemite. The right fork as you ascend is the main Tuolumne, which takes its rise in a glacier on the north side of Mount Lyell and flows through the Big Cañon. I have not traced the left fork to its highest source, but, judging from the general trend of the ridges, it must be near Castle Peak. Upon this left or North Fork there is a remarkably interesting series of

cascades, five in number, ranged along a picturesque gorge, on the edges of which we may saunter safely and gain fine views of the dancing spray below. The first is a wide-spreading fan of white, crystal-covered water, half leaping half sliding over a steep polished pavement, at the foot of which it rests and sets forth clear and shining on its final flow to the main river. A short distance above the head of this cascade you discover the second, which is as impressively wild and beautiful as the first, and makes you sing with it as though you were a part of it. It is framed in deep rock walls that are colored yellow and red with lichens, and fringed on the jagged edges by live-oaks and sabine pines, and at the bottom in damp nooks you may see ferns, lilies, and azaleas.

Three or four hundred yards higher you come to the third of the choir, the largest of the five. It is formed of three smaller ones inseparably combined, which sing divinely, and make spray of the best quality for rainbows. A short distance beyond this the gorge comes to an end, and the bare stream, without any definite channel, spreads out in a thin, silvery sheet about 150 feet wide. Its waters are, throughout almost its whole extent, drawn out in overlapping folds of lace, thick sown with diamond jets and sparks that give an exceedingly rich appearance. Still advancing, you hear a deep muffled booming, and you push eagerly on through flowery thickets until the last of the five appears through the foliage. The precipice down which it thunders is fretted with projecting knobs, forming polished keys upon which the wild waters play.

The bottom of the valley is divided by a low, glacier-polished bar of granite, the lower portion being mostly meadow land, the upper dry and sandy, and planted with fine Kellogg oaks, which frequently attain a diameter of six or seven feet. On the talus slopes the pines give place to the mountain live-oak, which forms the shadiest groves in the valley and the greatest in extent. Their glossy foliage, warm yellow-green and closely pressed, makes a kind of ceiling, supported by bare gray trunks and branches gnarled and picturesque. A few specimens of the sugar pine and tamarack pine are found in the valley, also the two silver firs. The Douglas spruce and the libocedrus attain noble dimensions in certain favorable spots, and a few specimens of the interesting *Torreya Californica* may be found on the south side. The brier-rose occurs in large patches, with tall, spiky mints and arching grasses. On the meadows lilies, larkspurs and lupines of several species are abundant, and in some places reach above one's head. Rock-ferns of rare beauty fringe and rosette the walls from top to bottom—*Pellaea densa, P. mucronata* and *P. Bridgesii, Cheilanthes gracillima, Allosorus*, etc. *Adiantum pedatum* occurs in a few mossy corners that get spray from the falls. *Woodwardia radicans* and *Asplenium felix-faemina* are the tallest ferns of the valley—six feet high, some of them. The whole valley was a charming garden when I last saw it, and the huts of the Indians and a lone cabin were the only improvements.

As will be seen by the map, I have thus briefly touched upon a number of the chief features of a region which it is proposed to reserve out of the public domain for the use and recreation of the people. A bill has already been introduced in Congress by Mr. Vandever creating a national park about the reservation which the State now holds in trust for the people. It is very desirable that the new reservation should at least extend to the limits indicated by the map, and the bill cannot too quickly become a law. Unless reserved or protected the whole region will soon or late be devastated by lumbermen and sheepmen, and so of course be made unfit for use as a pleasure ground. Already it is with great difficulty that campers, even in the most remote parts of the proposed reservation and in those difficult of access, can find grass enough to keep their animals from starving; the ground is already being gnawed and trampled into a desert condition, and when the region shall be stripped of its forests the ruin will be complete. Even the Yosemite will then suffer in the disturbance effected on the water-shed, the clear streams becoming muddy and much less regular in their flow. It is also devoutly to be hoped that the Hetch Hetchy will escape such ravages of man as one sees in Yosemite. Ax and plow, hogs and horses, have long been and are still busy in Yosemite's gardens and groves. All that is accessible and destructible is being rapidly destroyed—more rapidly than in any other Yosemite in the Sierra, though this is the only one that is under the special protection of the Government. And by far the greater part of this destruction of the fineness of wildness is of a kind that can claim no right relationship with that which necessarily follows use.

John Muir.

Map of the Yosemite region, showing present reservation, water-shed of the valley, and approximate limits of the proposed national park. [230K, 1080x940]

The above map represents the limits of the park as proposed by Mr. Muir and as advocated before the Committee on Public Lands of the House of Representatives. As we go to press, the Committee seems disposed to extend the north and south limits eastward to the Nevada line, thus adding an equal amount to the area here indicated. The honor of introducing the National Park bill belongs to General William Vandever of California.—EDITOR.

Transcribed by Dan Anderson from copy in the UCSD Library, 1997.

John Muir Writings

The Treasures of the Yosemite

The Century Magazine, Vol. XL. August, 1890. No. 4

View of the Yosemite Valley from Point Lookout—El Capitan on the left, the Bridal Veil Fall on the right, the Half Dome in the distance.

THE Yosemite Valley, in the heart of the Sierra Nevada, is a noble mark for the traveler, whether tourist, botanist, geologist, or lover of wilderness pure and simple. But those who are free may find the journey a long one; not because of the miles, for they are not so many,—only about two hundred and fifty from San Francisco, and passed over by rail and carriage roads in a day or two,—but the way is so beautiful that one is beguiled at every step, and the great golden days and weeks and months go by uncounted. How vividly my own first journey to Yosemite comes to mind, though made more than a score of years ago. I set out afoot from Oakland, on the bay of San Francisco, in April. It was the bloom-time of the year over all the lowlands and ranges of the coast; the landscape was fairly drenched with sunshine, the larks were singing, and the hills were so covered with flowers that they seemed to be painted. Slow indeed was my progress through these glorious gardens, the first of the California flora I had seen. Cattle and cultivation were making few scars as yet, and I wandered enchanted in long, wavering curves, aware now and then that Yosemite lay to the eastward, and that some time, I should find it.

One shining morning, at the head of the Pacheco Pass, a landscape was displayed that after all my wanderings still

appears as the most divinely beautiful and sublime I have ever beheld. There at my feet lay the great central plain of California, level as a lake thirty or forty miles wide, four hundred long, one rich furred bed of golden Compositae. And along the eastern shore of this lake of gold rose the mighty Sierra, miles in height, in massive, tranquil grandeur, so gloriously colored and so radiant that it seemed not clothed with light, but wholly composed of it, like the wall of some celestial city. Along the top, and extending a good way down, was a rich pearl-gray belt of snow; then a belt of blue and dark purple, marking the extension of the forests; and stretching along the base of the range a broad belt of rose-purple, where lay the miners' gold and the open foothill gardens—all the colors smoothly blending, making a wall of light clear as crystal and ineffably fine, yet firm as adamant. Then it seemed to me the Sierra should be called, not the Nevada or Snowy Range, but the Range of Light. And after ten years in the midst of it, rejoicing and wondering, seeing the glorious floods of light that fill it,—the sunbursts of morning among the mountain-peaks, the broad noonday radiance on the crystal rocks, the flush of the alpenglow, and the thousand dashing waterfalls with their marvelous abundance of irised spray,—it still seems to me a range of light. But no terrestrial beauty may endure forever. The glory of wildness has already departed from the great central plain. Its bloom is shed, and so in part is the bloom of the mountains. In Yosemite, even under the protection of the Government, all that is perishable is vanishing apace.

The Sierra is about 500 miles long, 70 miles wide, and from 7000 to nearly 15,000 feet high. In general views no mark of man is visible upon it, nor anything to suggest the wonderful depth and grandeur of its sculpture. None of its magnificent forest-crowned ridges seems to rise much above the general level to publish its wealth. No great valley or river is seen or group of well-marked features of any kind standing out as distinct pictures. Even the summit peaks, marshaled in glorious array so high in the sky, seem comparatively smooth and featureless. Nevertheless the whole range is furrowed with cañons to a depth of from 2000 to 5000 feet, in which once flowed majestic glaciers, and in which now flow and sing the bright Sierra rivers.

Though of such stupendous depth, these cañons are not raw, gloomy, jagged-walled gorges, savage and inaccessible. With rough passages here and there, they are mostly smooth, open pathways conducting to the fountains of the summit; mountain streets full of life and light, graded and sculptured by the ancient glaciers, and presenting throughout all their courses a rich variety of novel and attractive scenery—the most attractive that has yet been discovered in the mountain ranges of the world. In many places, especially in the middle region of the western flank, the main cañons widen into spacious valleys or parks of charming beauty, level and flowery and diversified like landscape gardens with meadows and groves and thickets of blooming bushes, while the lofty walls, infinitely varied in form, are fringed with ferns, flowering plants, shrubs of many species, and tall evergreens and oaks which find anchorage on a thousand narrow steps and benches, the whole enlivened and made glorious with rejoicing streams that come dancing and foaming over the sunny brows of the cliffs, and through side cañons in falls of every conceivable form, to join the shining river that flows in tranquil beauty down the middle of each one of them.

The most famous and accessible of these cañon valleys, and also the one that presents their most striking and sublime features on the grandest scale, is the Yosemite, situated on the upper waters of the Merced at an elevation of 4000 feet above the level of the sea. It is about seven miles long, half a mile to a mile wide, and nearly a mile deep, and is carved in the solid granite flank of the range. The walls of the valley are made up of rocks, mountains in size, partly separated from each other by side cañons and gorges; and they are so sheer in front, and so compactly and harmoniously built together on a level floor, that the place, comprehensively seen, looks like some immense hall or temple lighted from above. But no temple made with hands can compare with Yosemite. Every rock in its walls seems to glow with life. Some lean back in majestic repose; others, absolutely sheer or nearly so for thousands of feet, advance beyond their companions in thoughtful attitudes giving welcome to storms and calms alike, seemingly conscious, yet heedless of everything going on about them. Awful in stern, immovable majesty, how softly these mountain rocks are adorned and how fine and reassuring the company they keep—their feet set in groves and gay emerald meadows, their brows in the thin blue sky, a thousand flowers leaning confidingly against their adamantine bosses, bathed in floods of booming water, floods of light, while snow, clouds, winds, avalanches, shine and sing and wreathe about them as the years go by! Birds, bees, butterflies, and myriads of nameless wings stir the air into music and give glad animation. Down through the midst flows the crystal Merced—river of mercy—peacefully gliding, reflecting lilies and trees and the onlooking rocks, things frail and fleeting and types of endurance meeting here and blending in countless forms, as if into this one mountain mansion Nature had gathered her choicest treasures, whether great or small to draw her lovers into close and confiding communion with her.

Sauntering towards Yosemite up the foothills, richer and wilder become the forests and streams. At an elevation of 6000 feet above the level of the sea the silver firs are 200 feet high, with branches whorled around the colossal shafts in regular order, and every branch beautifully pinnate like a fern leaf. The Douglas spruce and the yellow and sugar pines here reach their highest developments of beauty and

grandeur, and the rich, brown-barked libocedrus with warm, yellow-green plumes. The majestic sequoia, too, is here, the king of conifers, "the noblest of a noble race." All these colossal trees are as wonderful in the fineness of their beauty and proportions as in stature, growing together, an assemblage of conifers surpassing all that have yet been discovered in the forests of the world. Here, indeed, is the tree-lover's paradise, the woods, dry and wholesome, letting in the light in shimmering masses half sunshine, half shade, the air indescribably spicy and exhilarating, plushy fir boughs for beds, and cascades to sing us asleep as we gaze through the trees to the stars.

Down grade into the valley.

On the highest ridges passed over on our way to Yosemite the lovely silver fir (*Abies amabilis*) forms the bulk of the woods, pressing forward in glorious array to the very brink of the walls on both sides and far beyond to a height of from 8000 to 9000 feet above the level of the sea. Thus it appears that Yosemite, presenting such stupendous faces of bare granite, is nevertheless embedded in magnificent forests. All the main species of pine, fir, spruce, and libocedrus are also found in the valley itself. But there are no "big trees" (*Sequoia gigantea*) in the valley or about the rim of it. The nearest are about ten miles beyond the boundary wall of the grant, on small tributaries of the Merced and Tuolumne. The sequoia belt extends along the western flank of the range, from the well-known Calaveras Grove on the north to the head of Deer Creek on the south, a distance of about two hundred miles, at an elevation of from about 5000 to 8000 feet above sea level. From the Calaveras to the south fork of King's River the species occurs only in small isolated groves or patches so sparsely distributed along the belt that two of the gaps that occur are nearly forty miles wide, one of them between the Stanislaus and Tuolumne groves, the other between those of the Fresno and King's River. Hence southward, instead of forming small sequestered groups among the other conifers, the big trees sweep majestically across the broad, rugged basins of the Kaweah and Tule in noble forests a distance of nearly seventy miles, with a width of from three to ten miles, the continuity of this portion of the belt being interrupted only by deep cañons.

The Fresno, the largest of the northern groves, occupies an area of three or four square miles, and is situated a short distance to the southward of the famous Mariposa Grove. Along the beveled rim of the cañon of the south fork of King's River there is a stately forest of sequoia about six miles long and two miles wide. This is the northernmost assemblage of big trees that may fairly be called a forest. Descending the precipitous divide between King's River and the Kaweah one enters the grand forests that form the main continuous portion of the belt. Advancing southward the trees become more and more irrepressibly exuberant, heaving their massive crowns into the sky from every ridge, and waving onward in graceful compliance with the complicated topography. The finest of the Kaweah portion of the belt is on the broad ridge between Marble Creek and the middle fork, and extends from the granite headlands overlooking the hot plains back to within a few miles of the cool glacial fountains. The extreme upper limit of the belt is reached between the middle and south forks of the Kaweah, at an elevation of 8400 feet. But the finest block of sequoia in the entire belt is on the north fork of the Tule River. In the northern groups there are comparatively few young trees or saplings. But here for every old, storm-stricken giant there is one or more in all the glory of prime, and for each of these there are many young trees and crowds of eager, hopeful saplings growing heartily everywhere—on moraines, rocky ledges, along watercourses, and in the deep, moist alluvium of meadows, seemingly in hot pursuit of eternal life.

Though the area occupied lily the species increases so much from north to south, there is no marked increase in the size of the trees. A height of two hundred and seventy-five feet and a diameter of twenty is perhaps about the average for full-grown trees: specimens twenty-five feet in diameter are not rare, and a good many are nearly three hundred feet high. The largest I have yet met in the course of my explorations is a majestic old monument in the new King's River forest. It is thirty-five feet and eight inches in

diameter inside the bark four feet from the ground, and a plank of solid wood the whole width of the tree might be hewn from it with out the slightest decay.

Under the most favorable conditions these giants live five or six thousand years though few of even the larger specimens are more than half as old. The sequoia seems to be entirely exempt from the diseases that afflict and kill other conifers—mildew, dry rot, or any other kind of rot. I never saw a sick sequoia, or one that seemed to be dying of old age. Unless destroyed by man, they live on indefinitely until burned, smashed by lightning, or cast down by the giving way of the ground on which they stand.

Destructive work in Yosemite Valley: the "Leidig Meadows" plowed up in October, 1888, to raise hay. ("Process" reproduction from a photograph.)

These king trees, all that there are of their kind in the world, are surely worth saving, whether for beauty, science, or bald use. But as yet only the isolated Mariposa Grove has been reserved as a park for public use and pleasure. Were the importance of our forests at all understood by the people in general, even from an economic standpoint their preservation would call forth the most watchful attention of the Government. At present, however, every kind of destruction is moving on with accelerated speed. Fifteen years ago I found five mills located on or near the lower margin of the main sequoia belt, all of which were cutting big-tree lumber. How many more have been built since that time I am unable to say, but most of the Fresno group are doomed to feed the large mills established near them, and a company with ample means is about ready for work on the magnificent forests of King's River. In these mill operations waste far exceeds use. For after the young, manageable trees have been cut, blasted, and sawed, the woods are fired to clear the ground of limbs and refuse, and of course the seedlings and saplings, and many of the unmanageable giants, are destroyed, leaving but little more than black, charred monuments. These mill ravages, however, are small as yet compared with the comprehensive destruction caused by "sheepmen." Incredible numbers of sheep are driven to the mountain pastures every summer, and desolation follows them. Every garden within reach is trampled, the shrubs are stripped of leaves as if devoured by locusts, and the woods are burned to improve the pasturage. The entire belt of forests is thus swept by fire, from one end of the range to the other; and, with the exception of the resinous *Pinus contorta*, the sequoia suffers most of all. Steps are now being taken towards the creation of a national park about the Yosemite, and great is the need, not only for the sake of the adjacent forests, but for the valley itself. For the branching cañons and valleys of the basins of the streams that pour into Yosemite are as closely related to it as are the fingers to the palm of the hand—as the branches, foliage, and flowers of a tree to the trunk. Therefore, very naturally, all the fountain region above Yosemite, with its peaks, cañons, snow fields, glaciers, forests, and streams, should be included in the park to make it an harmonious unit instead of a fragment, great though the fragment be; while to the westward, below the valley, the boundary might be extended with great advantage far enough to comprehend the Fresno, Mariposa, Merced, and Tuolumne groves of big trees, three of which are on roads leading to the valley, while all of them are in the midst of conifers scarcely less interesting than the colossal brown giants themselves.

From the heights on the margin of these glorious forests we at length gain our first general view of the valley—a view that breaks suddenly upon us in all its glory far and wide and deep; a new revelation in landscape affairs that goes far to make the weakest and meanest spectator rich and significant ever-more.

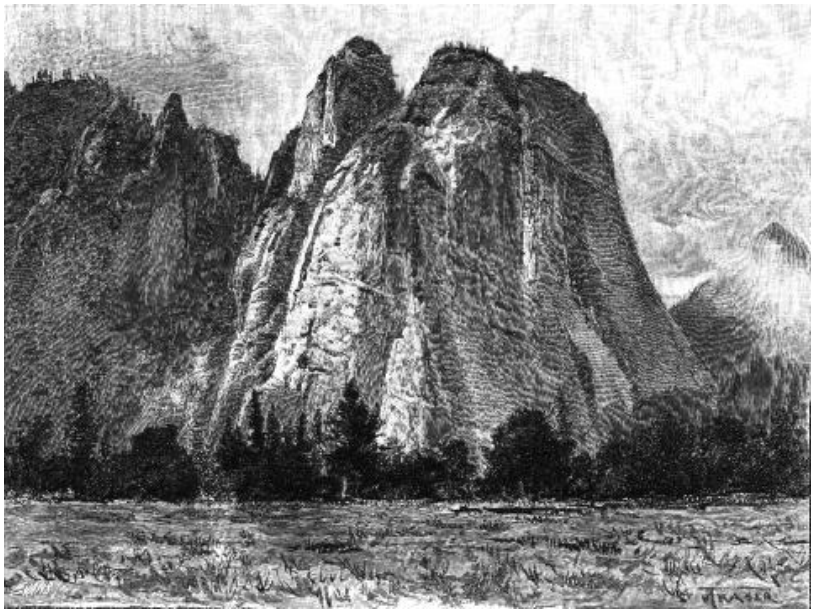
Along the curves and zigzags of the road, all the way down to the bottom, the valley is in sight with ever-changing views, and the eye ranges far up over the green grovy floor between the mighty walls, bits of the river gleaming here and there, while as we draw nearer we begin to hear the song of the waters. Gazing at random, perhaps the first object to gain concentrated attention will be the Bridal Veil, a beautiful waterfall on our right. Its brow, where it first leaps free from the rock, is about nine hundred feet above us; and as it sways and sings in the wind, with gauzy, sun-sifted spray half falling, half floating, it seems infinitely gentle and fine; but the hymn it sings tells the solemn power that is hidden beneath the soft clothing it wears.

On the other side of the valley, opposite the Veil, there is another magnificent fall, called the Ribbon Fall, or Virgin's Tears. The "tears" fall from a height of about 3000 feet, and are most extravagantly copious when the snow is melting, coming hissing and roaring with force enough to drive a mile of mills,

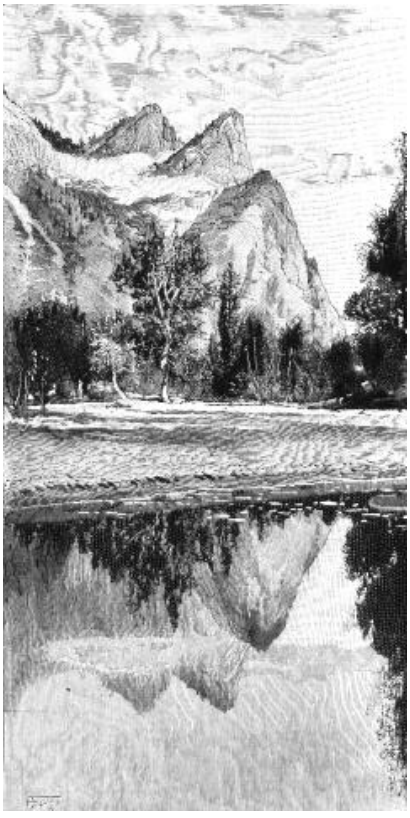
suggesting the "weeping skies" of cyclones and hurricanes.

Just beyond this glorious flood the El Capitan rock is seen through the pine groves pressing forward beyond the general line of the wall in most imposing grandeur. It is 3300 feet high, a plain, severely simple, glacier-sculptured face of granite, the end of one of the most compact and enduring of the mountain ridges, standing there in supreme height and breadth, a type of permanence.

Across the valley from here, above the Bridal Veil, are the picturesque Cathedral Rocks, nearly 2700 feet high, making a noble display of fine yet massive sculpture. They are closely related to El Capitan, having been hewn from the same mountain ridge by the Yosemite glacier when the valley was in process of formation.



Cathedral Rocks. (2600 feet high.)



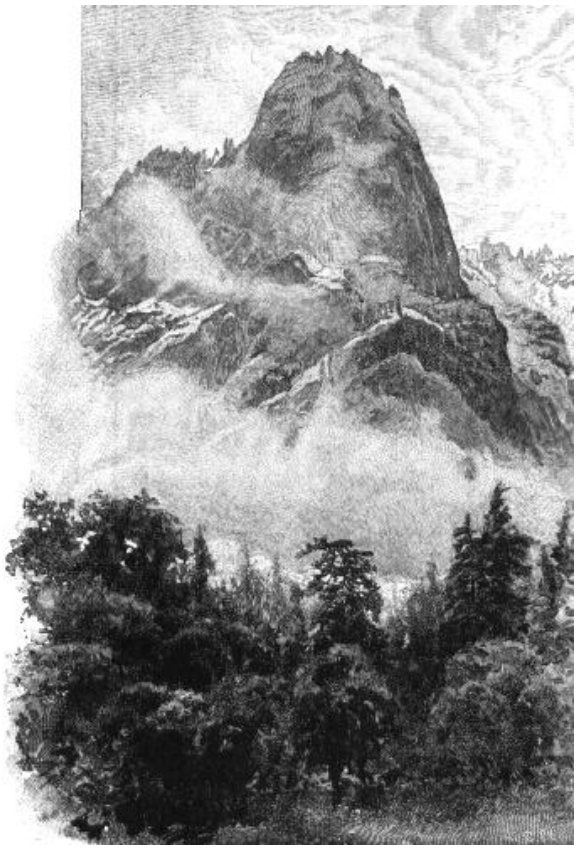
Mirror view of the Three Brothers.

Beyond El Capitan the next in succession of the most striking features of the north wall are the Three Brothers, an immense mountain mass with three gables fronting the valley one above the other, the topmost nearly 4000 feet high. They were named for three brothers captured here during the Indian warns, sons of Tenaya, the old Yosemite chief.

On the south wall opposite the Brothers towers the Sentinel Rock to a height of more than 3000 feet, a telling monument of the icy past.

Sauntering up the valley through meadow and grove, in the company of these majestic rocks, which seem to follow as we advance gazing, admiring, looking for new wonders ahead where all about us is wonderful, the thunder of the Yosemite Fall is heard, air when we arrive in front of the Sentinel it is revealed in all its glory from base to summit, half a mile in height, and seeming to gush direct from the sky. But even this fall, perhaps the most wonderful in the world, cannot at first control our attention, for now the wide upper portion of the valley is displayed to view, with the North Dome, Royal Arches, and Washington Column on our left; Glacier Point Rock, with its magnificent sculpture, on

the right; and in the middle Tissiack or Half Dome, the most beautiful and most sublime of all the mountain rocks about the valley. It rises in serene majesty from the fertile level into the sky to a height of 4750 feet.



Sentinel Rock.

Here the valley divides into three branches the Tenaya, Nevada, and Illilouette cañons and valleys, extending back into the fountains of the High Sierra, with scenery every way worthy the relation they bear to Yosemite.

In the south branch, a mile or two from the main valley, is the Illilouette Fall, 600 feet high, one of the most beautiful of all the Yosemite choir, but to most people inaccessible as yet on account of its rough, boulder-choked cañon. Its principal fountains of ice and snow lie in the beautiful and interesting mountains of the Merced group, while its broad, open basin in general is noted for the beauty of its lakes and extensive forests. Going up the north branch of the valley, we pass between the North Dome and the Half Dome, and in less than an hour come to Mirror Lake, the Dome Cascades, and Tenaya Fall, each interesting in its own way. Beyond the fall, on the north side of the cañon, is the sublime El Capitan-like rock called Mount Watkins; on the south the vast granite wave of Cloud's Rest, a mile in height; and between them the fine Tenaya Cascade with silvery plumes outspread on smooth, glacier-polished folds of granite, making a vertical descent in all of about 700 feet.

Just beyond the Dome Cascades, on the shoulder of Mount Watkins, there is an old trail once used by the Indians on their way across the range to Mono, but in the cañon above this point there is no trail of any sort. Between Mount Watkins and Cloud's Rest the cañon is accessible only to mountaineers, and it is so dangerous in some places that I hesitate to advise even good climbers anxious to test their nerve and skill to pass through it. Beyond the Cascades no great difficulty will be encountered. A succession of charming lily gardens and meadows occur in filled up lake basins among the rock-waves in the bottom of the cañon, and everywhere the surface of the granite has a smooth-wiped appearance, and in many places, reflecting the sunbeams, shines like glass—phenomena due to glacial action, the cañon having been the channel of one of the main tributaries of the ancient Yosemite glacier.

Ten miles above the valley we come to the beautiful Tenaya Lake, and here the cañon terminates. A mile or two above the lake stands the grand Sierra Cathedral, a building of one stone, hewn from the living rock, with sides, roof, gable, spire, and ornamental pinnacles, fashioned and finished symmetrically like a work of art, and set on a well-graded plateau about 9000 feet high, as if Nature in making so fine a house had also been careful that it should be finely seen. From every direction its peculiar form and graceful beauty of expression never fail to charm. Its height from the floor to the ridge of the roof is about 2500 feet, and among the pinnacles that adorn the front glorious views may be gained of the upper basins of the Merced and Tuolumne.

Passing on each side of the Cathedral we descend into the delightful Tuolumne Valley, from which excursions may be made to Mount Dana, Mono Lake, Mount Lyell, to the many curious peaks that rise above the meadows on the south, and to the Big Tuolumne Cañon with its glorious abundance of rocks and falling, gliding, tossing water. For all these the spacious meadows near the Soda Springs form a delightful center.

Returning now to Yosemite, and ascending the middle or Nevada branch of the valley, which is occupied by the main Merced River, we come within a few miles to the Vernal and Nevada falls, 400 and 600 feet high, and set in the novel and sublime rock-work. Above these, tracing the river, we are led into the Little Yosemite, a valley like the great Yosemite in form, sculpture, and vegetation. It is about three miles long, with walls 1500 to 2000 feet high, cascades coming over them, and the river flowing through the meadows and groves of the level bottom in tranquil crystal reaches.

Beyond this there are four other little Yosemites in the main cañon, making a series of five in all, the highest situated a few miles below the base of Mount Lyell, at an elevation of about 7800 feet above the sea. To describe these, with all

their wealth of Yosemite furniture, and the wilderness of lofty peaks above them, the home of the avalanche and treasury of the fountain snow, would take us far beyond the bounds of a magazine article. We cannot here consider the formation of these mountain landscapes—how the crystal rocks with crystal snow were brought to the light, making beauty whose influence is so mysterious on everybody who sees it; the blooming of the clouds; the fall of the snow; the flight of the avalanches; the invisible march of the grinding glaciers; the innumerable forms of the falling streams.

Of the small glacier lakes so characteristic of these upper regions, there are no fewer than sixty-seven in the basin of the main middle branch, besides countless smaller pools, all their waters crisp and living and looking out on beautiful skies. In the basin of the Illilouette there are sixteen, in the Tenaya and its branches thirteen. in the Yosemite creek basin fourteen, and in the Pohono or Bridal Veil one, making a grand total of a hundred and eleven lakes whose waters come to sing at Yosemite. So glorious is the background of the great valley, so harmonious its relations to its widespreading fountains. On each side also the same harmony prevails. Climbing out of the valley by the subordinate cañons, we find the ground rising from the brink of the walls—on the south side to the fountains of Pohono or Bridal Veil Creek, the basin of which is noted for the extent and beauty of its meadows and its superb forests of silver fir; on the north side through the basin of the Yosemite Creek to the dividing ridge along the Tuolumne Cañon and the fountains of the Hoffman spur.

In general views the Yosemite Creek basin seems to be paved with domes and smooth whaleback masses of granite in every stage of development—some showing only their crowns; others rising high and free above the girdling forests, singly or in groups. Others again are developed only on one side, forming bold outstanding bosses usually well fringed with shrubs and trees, and presenting the polished shining surfaces given them by the glacier that brought them into relief. On the upper portion of the basin broad moraine beds have been deposited and on these fine, thrifty forests are growing. Lakes and meadows and small spongy bogs may be found hiding here and there among the domes, in the woods, or back in the fountain recesses of Mount Hoffman, while a thousand gardens are planted along the banks of the streams. All the wide, fan-shaped upper portion of the basin is covered with a network of small rills that go cheerily on their way to their grand fall in the valley, now flowing on smooth pavements in sheets thin as glass, now diving under willows and laving their red roots, oozing through bogs, making tiny falls and cascades, whirling and dancing, calming again, gliding through bits of smooth glacier meadows with sod of Alpine agrostis mixed with blue and white violets and daisies, breaking, tossing among rough boulders and fallen trees, flowing together until, all united, they go to their fate with stately, tranquil air like a full-grown river. At the crossing of the Mono trail, about two miles above the head of the Yosemite Fall, the stream is nearly forty feet wide, and when the snow is melting rapidly in the spring it is about four feet deep, with a current of two and a half miles an hour. This is about the volume of water that forms the fall in May and June when there has been much snow the preceding winter; but it varies greatly from month to month. The snow rapidly vanishes from the open portion of the basin, which faces southward, and only a few of the tributaries reach back to perennial snow and ice fountains in the shadowy amphitheaters on the northern slopes of Mount Hoffman. The total descent made by the stream from its highest sources to its confluence with the Merced in the valley is about 6000 feet, while the distance is only about ten miles, an average fall of 600 feet per mile. The last mile of its course lies between the sides of sunken domes and swelling folds of the granite that are clustered and pressed together like a mass of bossy cumulus clouds. Through this shining way Yosemite Creek goes to its fate, swaying and swirling with easy, graceful gestures and singing the last of its mountain songs before it reaches the dizzy edge of Yosemite to fall 2600 feet into another world, where climates vegetation, inhabitants, all are different. Emerging from this last cañon the stream glides, in flat, lace-like folds, down a smooth incline into a small pool where it seems to rest and compose itself before taking the grand plunge. Then calmly, as if leaving a lake, it slips over the polished lip of the pool down another incline and out over the brow of the precipice in a magnificent curve thick sown with rainbow spray.

In tracing the stream for the first time, getting acquainted with the life it lived in the mountains, I was eager to reach the extreme verge to see how it behaves in flowing so far through the air; but after enjoying this view and getting safely away I have never advised any one to follow my steps. The last incline down which the stream journeys so gracefully is so steep and smooth one must slip cautiously forward on hands and feet alongside the rushing water, which so near one's head is very exciting. But to gain a perfect view one must go yet farther, over a curving brow to a slight shelf on the extreme brink. This shelf, formed by the flaking off of a fold of the granite, is about three inches wide, just wide enough for a safe rest for one's heels. To me it seemed nerve-trying to slip to this narrow foothold and poise on the edge of such a precipice so close to the confusing whirl of the waters; and after casting longing glances over the shining brow of the fall and listening to its sublime psalm, I concluded not to attempt to go nearer, but did, nevertheless, against reasonable judgment. Noticing some tufts of artemisia in a cleft of rock, I filled my mouth with the leaves, hoping their bitter taste might help to keep caution keen and prevent giddiness; then I reached the little ledge, got my heels well set, and worked side-wise twenty or thirty feet to a point close to the out-plunging current. Here the view is perfectly free down into the heart of the bright irised throng of comet-like streams into which the whole ponderous volume of the fall separates a little below the brow. So glorious a display of pure wildness, acting at close range while one is cut off from all the world beside, is terribly impressive.

Mirror view of Yosemite Falls.

About forty yards to the eastward of the Yosemite Fall on a fissured portion of the edge of the cliff a less nerve-trying view may be obtained, extending all the way down to the bottom from a point about two hundred feet below the brow of the fall, where the current, striking a narrow ledge, bounds out in the characteristic comet-shaped masses. Seen from here towards noon, in the spring, the rainbow on its brow seems to be broken up and mingled with the rushing comets until all the fall is stained with iris colors, leaving no white water visible. This is the best of the safe views from above, the huge steadfast rocks, the flying waters, and the rainbow light forming one of the most glorious pictures conceivable.

The Yosemite Fall is separated into an upper and a lower fall with a series of falls and cascades between them, but when viewed in front from the bottom of the valley they all appear as one.

The Nevada Fall usually is ranked next to the Yosemite in general interest among the five main falls of the valley. Coming through the Little Yosemite in tranquil reaches, charmingly embowered, the river is first broken into rapids on a moraine boulder bar that crosses the lower end of the valley. Thence it pursues its way to the head of the fall in a very rough channel, cut in the solid granite, dashing on side angles, heaving in heavy, surging masses against bossy knobs, and swirling and swashing in potholes without a moment's rest. Thus, already chafed and dashed to foam, over-folded and twisted it plunges over the brink of the precipice as if glad to escape into the open air. But before it reaches the bottom it is pulverized yet finer by impinging upon a sloping portion of the cliff about half way down, thus making it the whitest of all the falls of the valley, and altogether one of the most wonderful in the world.

On the north side, close to the head of the fall, a slab of granite projects over the brink, forming a fine point for a view over the throng of streamers and wild plunging thunderbolts; and through the broad drifts of spray we see the river far below gathering its spent waters and rushing on again down the cañon in glad exultation into Emerald Pool, where at length it grows calm and gets rest for what still lies before it. All the features of the view correspond with the waters. The glacier-sculptured walls of the cañon on either hand, with the sublime mass of the Glacier Point Ridge in front, form a huge triangular, pit-like basin, which, filled with the roar of the falling river, seems as if it might be the hopper of one of the mills of the gods in which the mountains were being ground to dust.

The Vernal, famous for its rainbows, is a staid, orderly, easy-going fall, proper and exact in every movement, with scarce a hint of the passionate enthusiasm of the Yosemite or the Nevada. Nevertheless it is a favorite with most visitors, doubtless because it is better seen than any other. A good stairway ascends the cliff beside it, and the level plateau at the head enables one to saunter safely along the edge of the stream as it comes from Emerald Pool and to watch its waters, calmly bending over the brow of the precipice, in a sheet 80 feet wide and changing from green to purplish gray and white until dashed on the rough boulder talus below. Thence issuing from beneath the clouds of the out-wafting spray we can see the adventurous stream, still unspent, beating its way down the rugged cañon in gray continuous cascades, dear to the ousel, until it sweeps around the shoulder of the Half Dome on its approach to the head of the main valley.

The Illilouette in general appearance most resembles the Nevada. The volume of water is less than half as great, but it is about the same height (600 feet), and its waters receive the same kind of preliminary tossing in a rocky irregular channel. Therefore it is a very white and fine-grained fall. When it is in full spring-time bloom it is partly divided by rocks that roughen the lip of the precipice, but this division amounts only to a kind of fluting and grooving of the column, which has

a beautiful effect. It is not nearly so grand a fall as the upper Yosemite, or so symmetrical as the Vernal, or so airily graceful and simple as the Bridal Veil, nor does it ever display so tremendous an outgush of snowy magnificence as the Nevada; but in the exquisite fineness and richness of texture of its flowing folds it surpasses them all.

One of the finest things I ever saw in Yosemite or elsewhere I found on the brow of this beautiful fall. It was in the Indian summer, when the leaf colors were ripe and the great cliffs and domes were transfigured in the hazy golden air. I had wandered up the rugged talus-dammed cañon of the Illilouette, admiring the wonderful views to be had there of the great Half Dome and the Liberty Cap, the foliage of the maples, dogwoods, rubus tangles, etc., the late goldenrods and asters, and the extreme purity of the water, which in motionless pools on this stream is almost perfectly invisible. The voice of the fall was now low, and the grand flood had waned to floating gauze and thin-broidered folds of linked and arrowy lace-work. When I reached the fall slant sun-beams were glinting across the head of it, leaving all the rest in shadow; and on the illumined brow a group of yellow spangles were playing, of singular form and beauty, flashing up and dancing in large flame-shaped masses, wavering at times, then steadying, rising and falling in accord with the shifting forms of the water. But the color changed not at all. Nothing in clouds or flowers, on bird-wings or the lips of shells, could rival it in fineness. It was the most divinely beautiful mass of yellow light I ever beheld—one of nature's precious sights that come to us but once in a lifetime.

Stairway on Cloud's Rest Trail.

Looking up Merced River, on the way to Vernal Falls.

For about a mile above Mirror Lake the cañon is level and well planted with fir, spruce, and libocedrus, forming a remarkably fine grove, at the head of which is the Tenaya Fall. Though seldom seen or described, this is, I think, the most picturesque fall in the valley. For a considerable distance above it Tenaya Creek comes rushing down, white and foamy, over a flat pavement inclined at an angle of about eighteen degrees. In time of high water this sheet of bright rapids is nearly seventy feet wide, and is varied in a very striking way by three parallel furrows that extend in the direction of the flow. These furrows, worn by the action of the stream upon cleavage joints, vary in width, are slightly sinuous, and have large boulders firmly wedged in them here and there in narrow places giving rise, of course, to a complicated series of wild dashes, doublings, and arching bounds in the swift torrent. Just before it reaches the sheer precipice of the fall the current is divided, the left division making a vertical fall of about eighty feet in a romantic leafy nook, while the other forms a rugged cascade.

Lunar rainbows or spraybows also abound; their colors as distinct as those of the sun, and as obviously banded, though less vivid. Fine specimens may be found any night at the foot of the upper Yosemite Fall, glowing gloriously amid the gloomy shadows of the cañon whenever there is plenty of moonlight and spray, silent interpreters of the heart-peace of Nature in the stormy darkness. Even the secondary bow is at times distinctly visible.

The best point from which to observe them is on Fern Ledge. For some time after moonrise the arc has a span of about five hundred feet, and is set upright; one end planted in the boiling spray at the bottom, the other in the edge of the fall, creeping lower, of course, and becoming less upright as the moon rises higher. This grand arc of color, glowing in mild, shapely beauty in so weird and huge a chamber of night shadows, and amid the rush and roar and tumultuous dashing of this thunder-voiced fall, is one of the most impressive and most cheering of all the blessed evangels of the mountains.

A wild scene, but not a safe one, is made by the moon as it appears through the edge of the Yosemite Fall when one is behind it. Once after enjoying the night-song of the waters, and watching the formation of the colored bow as the moon came round the domes and sent her beams into the wild uproar, I ventured out on the narrow bench that extends back of the fall from Fern Ledge and began to admire the dim-veiled grandeur of the view. I could see the fine gauzy threads of the outer tissue by having the light in front; and wishing to look at the moon through the meshes of some of the denser portions of the fall, I ventured to creep farther behind it while it was gently wind-swayed, without taking sufficient thought about the consequences of its swaying back to its natural position after the wind pressure should be removed. The effect was enchanting. Fine, savage music sounded above, beneath, around me; while the moon, apparently in the very midst of the rushing waters, seemed to be struggling to keep her place, on account of the ever-varying form and density of the water masses through which she was seen, now darkened by a rush of thick-headed comets, now flashing out through openings between them. I was in fairyland between the dark wall and the wild throng of illumined waters, but suffered sudden disenchantment; for, like the witch scene in Alloway Kirk, "in an instant all was dark." Down came a dash of spent comets, thin and harmless-looking in the distance, but desperately solid and stony in striking one's shoulders. It seemed like a mixture of choking spray and gravel. Instinctively dropping on my knees, I laid hold of an angle of the rock, rolled myself together with my face pressed against my breast, and in this attitude submitted as best I could to my thundering baptism. The heavier masses seemed to strike like cobblestones, and there was a confused noise of many waters about my ears—hissing, gurgling, clashing sounds that were not heard as music. The situation was easily realized. How fast one's thoughts burn at such times! I was weighing the chances of escape. Would the column be swayed a few inches away from the wall, or would it come yet closer? The fall was in flood, and not so lightly would its ponderous mass be swayed. My fate seemed to depend on a breath of the "idle wind." It was moved gently forward, the pounding ceased, and I once more revisited the glimpses of the moon. But fearing I might be caught at a disadvantage in making too hasty a retreat, I moved only a few feet along the bench to where a block of ice lay. Between the ice and the wall I wedged myself, and lay face downwards until the steadiness of the light gave encouragement to get away. Somewhat nerve-shaken, drenched, and benumbed, I made out to build a fire, warmed myself, ran home to avoid taking cold, reached my cabin before daylight, got an hour or two of sleep, and awoke sane and comfortable, better, not worse, for my wild bath in moonlit spray.

Destructive work in Yosemite Valley: stump forest, mostly of young pine, in "State Pasture," covering some eight acres. Cut in June, 1887, and felled in this one spot. ("Process" reproduction of photograph.)

Owing to the westerly trend of the valley and its vast depth there is a great difference between the climates of the north and south sides—greater than between many countries far apart; for the south wall is in shadow during the winter months, while the north is bathed in sunshine every clear day. Thus there is mild spring weather on one side of the valley while winter rules the other. Far up the north-side cliffs many a nook may be found closely embraced by sun-beaten rock-bosses in which flowers bloom every month of the year. Even butterflies may be seen in these high winter gardens except when storms are falling and a few days after they have ceased. Near the head of the lower Yosemite Fall in January I found the ant lions lying in wait in their warm sand-cups, rock ferns being unrolled, club mosses covered with fresh growing points, the flowers of the laurel nearly open, and the honeysuckle rosetted with bright young leaves; every plant seemed to be thinking about summer and to be stirred with good vital sunshine. Even on the shadow side of the valley the frost is never very sharp. The lowest temperature I ever observed during four winters was +7°. The first twenty-four days of January had an average temperature at 9 A. M. of 32°, minimum 22°; at 3 P. M. the average was 40° 30', the minimum 32°.

Throughout the winter months the spray of the upper Yosemite Fall is frozen while falling thinly exposed and is deposited around the base of the fall in the form of a hollow truncated cone, which sometimes reaches a height of five hundred feet or more, into the heart of which the whole volume of the fall descends with a tremendous roar as if pouring down the throat of a crater. In the building of this ice-cone part of the frozen spray falls directly to its place, but a considerable portion is first frozen upon the face of the cliff on both sides of the fall, and attains a thickness of a foot or more during the night. When the sun strikes this ice-coating it is expanded and cracked off in masses weighing from a few pounds to several tons, and is built into the walls of the cone; while in windy, frosty weather, when the fall is swayed from side to

side, the cone is well drenched, and the loose ice-masses and dust are all firmly frozen together. The thundering, reverberating reports of the falling ice-masses are like those of heavy cannon. They usually occur at intervals of a few minutes, and are the most strikingly characteristic of the winter sounds of the valley, and constant accompaniments of the best sunshine. While this stormy building is in progress the surface of the cone is smooth and pure white, the whole presenting the appearance of a beautiful crystal hill wreathed with folds of spray which are oftentimes irised. But when it is wasting and breaking up in the spring its surface is strewn with leaves, pine branches, stones, sand, etc., that have been brought over the fall, making it look like a heap of avalanche detritus.

After being engulfed and churned in the stormy interior of the crater the waters of the fall issue from arched openings at the base, seemingly scourged and weary and. glad to escape, while belching spray spouted up out of the throat past the descending current is wafted away in irised drifts to the rocks and groves.

Anxious to learn what I could about the structure of this curious ice-hill, I tried to climb it, carrying an ax to cut footsteps. Before I had reached the base of it I was met by a current of spray and wind that made breathing difficult. I pushed on backward, however, and soon gained the slope of the hill, where by creeping close to the surface most of the blast was avoided. Thus I made my way nearly to the summit, halting at times to peer up through the wild whirls of spray, or to listen to the sublime thunder beneath me, the whole hill sounding as if it were a huge, bellowing, exploding drum. I hoped that by waiting until the fall was blown aslant I should be able to climb to the lip of the crater and get a view of the interior; but a suffocating blast, half air, half water, followed by the fall of an enormous mass of ice from the wall, quickly discouraged me. The whole cone was jarred by the blow, and I was afraid its side might fall in. Some fragments of the mass sped past me dangerously near; so I beat a hasty retreat, chilled and drenched, and laid myself on a sunny rock in a safe place to dry.

The Bridal Veil, upper Yosemite, and the Tu-ee-u-la-la of Hetch Hetchy (the next cañon to the north), on account of their height and exposure, are greatly influenced by winds. The common summer winds that come up the river cañon from the plains are never very strong, partly on account of the roughness of the way they have to travel. But the north winds of winter do some very wild work, worrying the falls and the forests, and hanging snow banners, a mile long, on the peaks of the summit of the range. One morning I was awakened by the pelting of pine cones on the roof of my cabin, and found, on going out, that the north wind had taken possession of the valley, filling it with a sea-like roar, and, arousing the pines to magnificent action, made them bow like supple willows. The valley had been visited a short time before by a succession of most beautiful snowstorms, and the floor, and the cliffs, and all the region round about were lavishly laden with winter jewelry. Rocks, trees, the sandy flats and the meadows, all were in bloom, and the air was filled with a dust of shining petals. the gale increased all day, and branches and tassels and empty burs of the silver pine covered the snow, while the falls were being twisted and torn and tossed about as if they were mere wisps of floating mist. In the morning the great ponderous column of the upper Yosemite Fall, increased in volume by the melting of the snow during a warm spell, was caught by a tremendous blast, bent upwards, torn to shreds, and driven back over the brow of the cliff whence it came, as if denied admission to the valley. This kind of work would be kept up for ten or fifteen minutes, then a partial lull in the storm would allow the vast torrent to arrange its tattered skirts, and come back again to sing on in its accustomed course. Amid all this rocking and bending and baffling of the waters they were lighted by a steady glare of sunlight, strangely white from spicules of snow crystals. The lower fall, though less exposed, was yet violently swirled and torn and thrashed about in its narrow cañon, and at times appeared as one resplendent mass of iris colors from top to bottom, as if a hundred rainbows had been doubled up into a mass four or five hundred feet in diameter. In the afternoon, while I watched the upper fall from the shelter of a pine tree, it was suddenly arrested in its descent at a point about half way down, and was neither blown upward nor driven aside, but was simply held stationary in mid air, as if gravitation below that point in the path of its descent had ceased to act. The ponderous flood, weighing hundreds of tons, was sustained hovering, hesitating, like a bunch of thistledown, while I counted 190. All this time the ordinary amount of water was coming over the cliff and accumulating in the air, swedging and widening and forming an irregular cone 700 feet high tapering to the top of the wall, the whole standing still, resting on the invisible arm of the north wind. At length, as if commanded to go on again, scores of arrowy comets shot forth from the bottom of the suspended mass as if escaping from separate outlets.

The brow of El Capitan was decked with long streamers of snow-like hair, Cloud's Rest was enveloped in drifting gossamer films, and the Half Dome loomed up in the garish light like some majestic living creature clad in the same gauzy, wind-woven drapery, upward currents meeting overhead sometimes making it smoke like a volcano.

Glorious as are these rocks and waters when jumbled in storm winds, or chanting rejoicing in everyday dress, there is a glory that excelleth, when rare conditions of weather meet to make every valley, hollow, gorge, and cañon sing with flood waters.

Only once have I seen Yosemite in full bloom of flood during all the years I have lived there. In 1871 the early winter weather was delightful; the days all sunshine, the nights clear and serene, calling forth fine crops of frost crystals for the withered ferns and grasses, the most luxuriant growths of hoar-frost imaginable. In the afternoon of December 16, when I was sauntering on the meadows, I noticed a massive crimson cloud growing in solitary grandeur above Cathedral Rocks, its form scarcely less striking than its color. It had a picturesque, bulging base like an old sequoia, a smooth, tapering stem, and a bossy, down-curling crown like a mushroom; all its parts colored alike, making one mass of translucent crimson. Wondering what the meaning of that lonely red cloud might be, I was up betimes next morning looking at the weather, but all seemed tranquil as yet. Towards noon gray clouds began to grow which had a close, curly grain like bird's-eye maple, and late at night rain fell, which soon changed to snow; next morning about ten inches lay on the meadows, and it was still falling in a fine, cordial storm.

Destructive work in Yosemite Valley: specimen tree trimming done in 1887-88. Much similar work has been done in other parts of the valley. ("Process" reproduction of photograph.)

During the night of the 18th a torrent of rain fell on the snow, but as the temperature was 34°, the snow line was only a few hundred feet above the bottom of the valley, and to get out of the rainstorm into the snowstorm one had only to climb a little above the tops of the pines. The streams, therefore, instead of being increased in volume, were diminished by the storm, because the snow sponged up part of their waters and choked the smaller tributaries. But about midnight the temperature suddenly rose to 42°, carrying the snow line far beyond the valley, over the upper basins perhaps to the summit of the range, and next morning Yosemite was rejoicing in a glorious flood. Tile warm, copious rain falling on the snow was at first absorbed and held back, and so also was that portion of the snow that the rain melted, and all that was melted by the warm wind, until the whole mass of snow was saturated and became sludgy, and at length slipped and rushed simultaneously from a thousand slopes into the channels in wild extravagance, heaping and swelling flood over flood, and plunging into the valley in one stupendous avalanche.

Awakened by the roar, I looked out and at once recognized the extraordinary character of the storm. The rain was still pouring in torrents, and the wind, blowing a gale, was working in passionate accord with the flood. The section of the north wall visible from my cabin was covered with a network of falls—new visitors that seemed strangely out of place. Eager to get into the midst of the show, I snatched a piece of bread for breakfast and ran out. The mountain waters, suddenly liberated, seemed to be holding a grand jubilee. The two Sentinel cascades rivaled the great falls at ordinary stages, and across the valley by the Three Brothers I caught glimpses of more falls than I could readily count; while the whole valley throbbed and trembled, and was filled with an awful, massive, solemn, sea-like roar. After looking about me bewildered for a few moments I tried to reach the upper meadows, where the valley is widest, that I might be able to see the walls on both sides, and thus gain general views. But the meadows were flooded, forming an almost continuous lake dotted with blue sludgy islands, while innumerable streams roared like lions across my path and were sweeping forward rocks and logs with tremendous energy over ground where tiny gilias had been growing but a short time before. Climbing into the talus slopes, where these savage torrents were broken among earthquake boulders, I succeeded in crossing them, and forced my way up the valley to Hutchings' Bridge, where I crossed the river and waded to the middle of the upper meadow. Here most of the new falls were in sight, probably the most glorious assemblage of waterfalls ever displayed from any one standpoint in the world. On that portion of the south wall between Hutchings' and the Sentinel there were ten falls plunging and booming from a height of nearly 3000 feet, the smallest of which might have been heard miles away. In the neighborhood of Glacier Point there were six; between the Three Brothers and Yosemite Fall, nine; between Yosemite and Royal Arch Falls, ten; from Washington Column to Mount Watkins, ten; on the slopes of Half Dome, facing Mirror Lake, eight; on the shoulder of Half Dome, facing the valley, three—fifty-six new falls occupying the upper end of the valley, besides a countless host of silvery threads gleaming everywhere. In all the valley there must have been upward of a hundred. As if celebrating some great event, falls and cascades came thronging in Yosemite costume from every groove and cañon far and near.

All summer visitors will remember the comet forms of the Yosemite Fall and the laces of the Bridal Veil and Nevada. In the falls of this winter jubilee the lace forms predominated, but there was no lack of thunder-toned comets. The lower portion of one of the Sentinel cascades was composed of two main white shafts, the space between them filled in with chained and beaded gauze of intricate pattern, through the singing threads of which the purplish-gray rock could be dimly seen. The series above Glacier Point was still more complicated in structure, displaying every form that one would imagine water might be dashed and combed and woven into. Those on the north wall between Washington Column and the Royal Arch Fall were so nearly related that they formed an almost continuous sheet, and these again were but slightly

separated from those about Indian Cañon. The group about the Three Brothers and El Capitan, owing to the topography and cleavage of the cliffs back of them, were more broken and irregular. The Tissiack cascades were comparatively small, yet sufficient to give that noblest of mountain rocks a glorious voice. In the midst of all this rejoicing the Yosemite Fall was scarce heard until about three o'clock in the afternoon. Then I was startled by a sudden thundering crash as if a rock avalanche had come to join the chorus. This was the flood wave of Yosemite Creek, which had just arrived, delayed by the distance it had to travel, and by the choking snows of its widespread fountains. Now, with volume tenfold increased beyond its springtime fullness, it took its place as leader of the glorious choir. No idle, silent water was to be found anywhere; all sang loud or low in divine harmony.

And the winds sang too, playing on every pine, leaf, and rock, surging against the huge brows and domes and outstanding battlements, deflected hither and thither, broken into a thousand cascading currents that whirled in the hollow. And these again, reacting on the clouds, eroded immense cavernous spaces in their gray depths, sweeping forward the resulting detritus in ragged trains like the moraines of glaciers. These cloud movements in turn published the work of the winds, giving them a visible body, and enabling us to trace their wild career. As if endowed with independent motion, some detached cloud would rise hastily upon some errand to the very top of the wall in a single effort, examining the faces of the cliffs, and then perhaps as suddenly descend to sweep imposingly along the meadows, trailing draggled fringes through the pines, fondling their waving spires with infinite gentleness, or gliding behind a grove or a single tree bring it into striking relief, while all bowed and waved in solemn rhythm. Sometimes as they drooped and condensed, or thinned to misty gauze, half the valley would be veiled at once, leaving here and there some lofty headland cut off from all visible connection with the walls, looming alone, dim, spectral, as if belonging to the sky—visitors, like the new falls, come to take part in the festival. Thus for two days and nights in measureless extravagance the storm went on, and mostly without spectators, at least of a terrestrial kind. I saw nobody out—bird, bear, squirrel, or man. Tourists had vanished months before, and the hotel people and laborers were out of sight, careful about getting cold and wet, and satisfied with views from doors and windows. The bears, I suppose, were in their boulder dens in the cañons, the squirrels in their knot-hole nests, the grouse in close fir groves, and the small singers in the chaparral. Strange to say, I did not see even the water-ousel, though he must have greatly enjoyed the storm.

This was the most sublime waterfall flood I ever saw—clouds, winds, rocks, waters, throbbing together as one. And then to contemplate what was going on simultaneously with all this in other mountain temples: the Big Tuolumne Cañon—how the white waters were singing there, and the winds, and how the clouds were marching. In Hetch Hetchy Valley also, and the great King's River Yosemite, and in all the other cañons and valleys of the Sierra from Shasta to the southernmost fountains of the Kern—five hundred miles of flooded waterfalls chanting together. What a psalm was that!

John Muir.

- Map of the Yosemite Valley, August 1890. [451K, 1080x940]
- Map of the Yosemite Region, showing present reservation, water-shed of the Valley, and approximate limits of the proposed national park. [227K, 1560x1100]

Transcribed by Dan Anderson from copy in the UCSD Library, 1997.

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John Muir Writings

The Mountains of California, by John Muir (1894)

Chapter 10
A Wind-storm in the Forests

[Back to chapter 9] • [Forward to chapter 11] • [Contents]

THE mountain winds, like the dew and rain, sunshine and snow, are measured and bestowed with love on the forests to develop their strength and beauty. However restricted the scope of other forest influences, that of the winds is universal. The snow bends and trims the upper forests every winter, the lightning strikes a single tree here and there, while avalanches mow down thousands at a swoop as a gardener trims out a bed of flowers. But the winds go to every tree, fingering every leaf and branch and furrowed bole; not one is forgotten; the Mountain Pine towering with outstretched arms on the rugged buttresses of the icy peaks, the lowliest and most retiring tenant of the dells; they seek and find them all, caressing them tenderly, bending them in lusty exercise, stimulating their growth, plucking off a leaf or limb as required, or removing an entire tree or grove, now whispering and cooing through the branches like a sleepy child, now roaring like the ocean; the winds blessing the forests, the forests the winds, with ineffable beauty and harmony as the sure result.

After one has seen pines six feet in diameter bending like grasses before a mountain gale, and

A WIND-STORM IN THE CALIFORNIA FORESTS. (AFTER A SKETCH BY THE AUTHOR.)

ever and anon some giant falling with a crash that shakes the hills, it seems astonishing that any, save the lowest thickset trees, could ever have found a period sufficiently stormless to establish themselves; or, once established, that they should not, sooner or later, have been blown down. But when the storm is over, and we behold the same forests tranquil again, towering fresh and unscathed in erect majesty, and consider what centuries of storms have fallen upon them since they were first planted,—hail, to break the tender seedlings; lightning, to scorch and shatter; snow, winds, and avalanches, to crush and overwhelm,—while the manifest result of all this wild storm-culture is the glorious perfection we behold; then faith in Nature's forestry is established, and we cease to deplore the violence of her most destructive gales, or of any other storm-implement whatsoever.

There are two trees in the Sierra forests that are never blown down, so long as they continue in sound health. These are the Juniper and the Dwarf Pine of the summit peaks. Their stiff, crooked roots grip the storm-beaten ledges like eagles' claws, while their lithe, cord-like branches bend round compliantly, offering but slight holds for winds, however violent. The other alpine conifers—the Needle Pine, Mountain Pine, Two-leaved Pine, and Hemlock Spruce—are never thinned out by this agent to any destructive extent, on account of their admirable toughness and the closeness of their growth. In

general the same is true of the giants of the lower zones. The kingly Sugar Pine, towering aloft to a height of more than 200 feet, offers a fine mark to storm-winds; but it is not densely foliaged, and its long, horizontal arms swing round compliantly in the blast, like tresses of green, fluent algæ in a brook; while the Silver Firs in most places keep their ranks well together in united strength. The Yellow or Silver Pine is more frequently overturned than any other tree on the Sierra, because its leaves and branches form a larger mass in proportion to its height, while in many places it is planted sparsely, leaving open lanes through which storms may enter with full force. Furthermore, because it is distributed along the lower portion of the range, which was the first to be left bare on the breaking up of the ice-sheet at the close of the glacial winter, the soil it is growing upon has been longer exposed to post-glacial weathering, and consequently is in a more crumbling, decayed condition than the fresher soils farther up the range, and therefore offers a less secure anchorage for the roots.

While exploring the forest zones of Mount Shasta, I discovered the path of a hurricane strewn with thousands of pines of this species. Great and small had been uprooted or wrenched off by sheer force, making a clean gap, like that made by a snow avalanche. But hurricanes capable of doing this class of work are rare in the Sierra, and when we have explored the forests from one extremity of the range to the other, we are compelled to believe that they are the most beautiful on the face of the earth, however we may regard the agents that have made them so.

There is always something deeply exciting, not only in the sounds of winds in the woods, which exert more or less influence over every mind, but in their varied waterlike flow as manifested by the movements of the trees, especially those of the conifers. By no other trees are they rendered so extensively and impressively visible, not even by the lordly tropic palms or tree-ferns responsive to the gentlest breeze. The waving of a forest of the giant Sequoias is indescribably impressive and sublime, but the pines seem to me the best interpreters of winds. They are mighty waving goldenrods, ever in tune, singing and writing wind-music all their long century lives. Little, however, of this noble tree-waving and tree-music will you see or hear in the strictly alpine portion of the forests. The burly Juniper, whose girth sometimes more than equals its height, is about as rigid as the rocks on which it grows. The slender lash-like sprays of the Dwarf Pine stream out in wavering ripples, but the tallest and slenderest are far too unyielding to wave even in the heaviest gales. They only shake in quick, short vibrations. The Hemlock Spruce, however, and the Mountain Pine, and some of the tallest thickets of the Two-leaved species bow in storms with considerable scope and gracefulness. But it is only in the lower and middle zones that the meeting of winds and woods is to be seen in all its grandeur.

One of the most beautiful and exhilarating storms I ever enjoyed in the Sierra occurred in December, 1874, when I happened to be exploring one of the tributary valleys of the Yuba River. The sky and the ground and the trees had been thoroughly rain-washed and were dry again. The day was intensely pure, one of those incomparable bits of California winter, warm and balmy and full of white sparkling sunshine, redolent of all the purest influences of the spring, and at the same time enlivened with one of the most bracing wind-storms conceivable. Instead of camping out, as I usually do, I then chanced to be stopping at the house of a friend. But when the storm began to sound, I lost no time in pushing out into the woods to enjoy it. For on such occasions Nature has always something rare to show us, and the danger to life and limb is hardly greater than one would experience crouching deprecatingly beneath a roof.

It was still early morning when I found myself fairly adrift. Delicious sunshine came pouring over the hills, lighting the tops of the pines, and setting free a steam of summery fragrance that contrasted strangely with the wild tones of the storm. The air was mottled with pine-tassels and bright green plumes, that went flashing past in the sunlight like birds pursued. But there was not the slightest dustiness, nothing less pure than leaves, and ripe pollen, and flecks of withered bracken and moss. I heard trees falling for hours at the rate of one every two or three minutes; some uprooted, partly on account of the loose, water-soaked condition of the ground; others broken straight across, where some weakness caused by fire had determined the spot. The gestures of the various trees made a delightful study. Young Sugar Pines, light and feathery as squirrel-tails, were bowing almost to the ground; while the grand old patriarchs, whose massive boles had been tried in a hundred storms, waved solemnly above them, their long, arching branches streaming fluently on the gale, and every needle thrilling and ringing and shedding off keen lances of light like a diamond. The Douglas Spruces, with long sprays drawn out in level tresses, and needles massed in a gray, shimmering glow, presented a most striking appearance as they stood in bold relief along the hilltops. The madroños in the dells, with their red bark and large glossy leaves tilted every way, reflected the sunshine in throbbing spangles like those one so often sees on the rippled surface of a glacier lake. But

the Silver Pines were now the most impressively beautiful of all. Colossal spires 200 feet in height waved like supple goldenrods chanting and bowing low as if in worship, while the whole mass of their long, tremulous foliage was kindled into one continuous blaze of white sun-fire. The force of the gale was such that the most steadfast monarch of them all rocked down to its roots with a motion plainly perceptible when one leaned against it. Nature was holding high festival, and every fiber of the most rigid giants thrilled with glad excitement.

I drifted on through the midst of this passionate music and motion, across many a glen, from ridge to ridge; often halting in the lee of a rock for shelter, or to gaze and listen. Even when the grand anthem had swelled to its highest pitch, I could distinctly hear the varying tones of individual trees,—Spruce, and Fir, and Pine, and leafless Oak,—and even the infinitely gentle rustle of the withered grasses at my feet. Each was expressing itself in its own way,—singing its own song, and making its own peculiar gestures,—manifesting a richness of variety to be found in no other forest I have yet seen. The coniferous woods of Canada, and the Carolinas, and Florida, are made up of trees that resemble one another about as nearly as blades of grass, and grow close together in much the same way. Coniferous trees, in general, seldom possess individual character, such as is manifest among Oaks and Elms. But the California forests are made up of a greater number of distinct species than any other in the world. And in them we find, not only a marked differentiation into special groups, but also a marked individuality in almost every tree, giving rise to storm effects indescribably glorious.

Toward midday, after a long, tingling scramble through copses of hazel and ceanothus, I gained the summit of the highest ridge in the neighborhood; and then it occurred to me that it would be a fine thing to climb one of the trees to obtain a wider outlook and get my ear close to the Æolian music of its topmost needles. But under the circumstances the choice of a tree was a serious matter. One whose instep was not very strong seemed in danger of being blown down, or of being struck by others in case they should fall; another was branchless to a considerable height above the ground, and at the same time too large to be grasped with arms and legs in climbing; while others were not favorably situated for clear views. After cautiously casting about, I made choice of the tallest of a group of Douglas Spruces that were growing close together like a tuft of grass, no one of which seemed likely to fall unless all the rest fell with it. Though comparatively young, they were about 100 feet high, and their lithe, brushy tops were rocking and swirling in wild ecstasy. Being accustomed to climb trees in making botanical studies, I experienced no difficulty in reaching the top of this one, and never before did I enjoy so noble an exhilaration of motion. The slender tops fairly flapped and swished in the passionate torrent, bending and swirling backward and forward, round and round, tracing indescribable combinations of vertical and horizontal curves, while I clung with muscles firm braced, like a bobo-link on a reed.

In its widest sweeps my tree-top described an arc of from twenty to thirty degrees, but I felt sure of its elastic temper, having seen others of the same species still more severely tried—bent almost to the ground indeed, in heavy snows—without breaking a fiber. I was therefore safe, and free to take the wind into my pulses and enjoy the excited forest from my superb outlook. The view from here must be extremely beautiful in any weather. Now my eye roved over the piny hills and dales as over fields of waving grain, and felt the light running in ripples and broad swelling undulations across the valleys from ridge to ridge, as the shining foliage was stirred by corresponding waves of air. Oftentimes these waves of reflected light would break up suddenly into a kind of beaten foam, and again, after chasing one another in regular order, they would seem to bend forward in concentric curves, and disappear on some hillside, like sea-waves on a shelving shore. The quantity of light reflected from the bent needles was so great as to make whole groves appear as if covered with snow, while the black shadows beneath the trees greatly enhanced the effect of the silvery splendor.

Excepting only the shadows there was nothing somber in all this wild sea of pines. On the contrary, notwithstanding this was the winter season, the colors were remarkably beautiful. The shafts of the pine and libocedrus were brown and purple, and most of the foliage was well tinged with yellow; the laurel groves, with the pale undersides of their leaves turned upward, made masses of gray; and then there was many a dash of chocolate color from clumps of manzanita, and jet of vivid crimson from the bark of the madroños, while the ground on the hillsides, appearing here and there through openings between the groves, displayed masses of pale purple and brown.

The sounds of the storm corresponded gloriously with this wild exuberance of light and motion. The profound bass of the naked branches and boles booming like waterfalls; the quick, tense vibrations of the pine-needles, now rising to a shrill, whistling hiss, now falling to a silky murmur; the rustling of laurel groves in the dells, and the keen metallic click of leaf on leaf—all this was heard in easy analysis when the attention was calmly bent.

The varied gestures of the multitude were seen to fine advantage, so that one could recognize the different species at a distance of several miles by this means alone, as well as by their forms and colors, and the way they reflected the light. All seemed strong and comfortable, as if really enjoying the storm, while responding to its most enthusiastic greetings. We hear much nowadays concerning the universal struggle for existence, but no struggle in the common meaning of the word was manifest here; no recognition of danger by any tree; no deprecation; but rather an invincible gladness as remote from exultation as from fear.

I kept my lofty perch for hours, frequently closing my eyes to enjoy the music by itself, or to feast quietly on the delicious fragrance that was streaming past. The fragrance of the woods was less marked than that produced during warm rain, when so many balsamic buds and leaves are steeped like tea; but, from the chafing of resiny branches against each other, and the incessant attrition of myriads of needles, the gale was spiced to a very tonic degree. And besides the fragrance from these local sources there were traces of scents brought from afar. For this wind came first from the sea, rubbing against its fresh, briny waves, then distilled through the redwoods, threading rich ferny gulches, and spreading itself in broad undulating currents over many a flower-enameled ridge of the coast mountains, then across the golden plains, up the purple foot-hills, and into these piny woods with the varied incense gathered by the way.

Winds are advertisements of all they touch, however much or little we may be able to read them; telling their wanderings even by their scents alone. Mariners detect the flowery perfume of land-winds far at sea, and sea-winds carry the fragrance of dulse and tangle far inland, where it is quickly recognized, though mingled with the scents of a thousand land-flowers. As an illustration of this, I may tell here that I breathed sea-air on the Firth of Forth, in Scotland, while a boy; then was taken to Wisconsin, where I remained nineteen years; then, without in all this time having breathed one breath of the sea, I walked quietly, alone, from the middle of the Mississippi Valley to the Gulf of Mexico, on a botanical excursion, and while in Florida, far from the coast, my attention wholly bent on the splendid tropical vegetation about me, I suddenly recognized a sea-breeze, as it came sifting through the palmettos and blooming vine-tangles, which at once awakened and set free a thousand dormant associations, and made me a boy again in Scotland, as if all the intervening years had been annihilated.

Most people like to look at mountain rivers, and bear them in mind; but few care to look at the winds, though far more beautiful and sublime, and though they become at times about as visible as flowing water. When the north winds in winter are making upward sweeps over the curving summits of the High Sierra, the fact is sometimes published with flying snow-banners a mile long. Those portions of the winds thus embodied can scarce be wholly invisible, even to the darkest imagination. And when we look around over an agitated forest, we may see something of the wind that stirs it, by its effects upon the trees. Yonder it descends in a rush of water-like ripples, and sweeps over the bending pines from hill to hill. Nearer, we see detached plumes and leaves, now speeding by on level currents, now whirling in eddies, or, escaping over the edges of the whirls, soaring aloft on grand, upswelling domes of air, or tossing on flame-like crests. Smooth, deep currents, cascades, falls, and swirling eddies, sing around every tree and leaf, and over all the varied topography of the region with telling changes of form, like mountain rivers conforming to the features of their channels.

After tracing the Sierra streams from their fountains to the plains, marking where they bloom white in falls, glide in crystal plumes, surge gray and foam-filled in boulder-choked gorges, and slip through the woods in long, tranquil reaches —after thus learning their language and forms in detail, we may at length hear them chanting all together in one grand anthem, and comprehend them all in clear inner vision, covering the range like lace. But even this spectacle is far less sublime and not a whit more substantial than what we may behold of these storm-streams of air in the mountain woods.

We all travel the milky way together, trees and men; but it never occurred to me until this storm-day, while swinging in the wind, that trees are travelers, in the ordinary sense. They make many journeys, not extensive ones, it is true; but our own little journeys, away and back again, are only little more than tree-wavings—many of them not so much.

When the storm began to abate, I dismounted and sauntered down through the calming woods. The storm-tones died away, and, turning toward the east, I beheld the countless hosts of the forests hushed and tranquil, towering above one another on the slopes of the hills like a devout audience. The setting sun filled them with amber light, and seemed to say, while they listened, "My peace I give unto you."

As I gazed on the impressive scene, all the so called ruin of the storm was forgotten, and never before did these noble woods appear so fresh, so joyous, so immortal.

[Back to chapter 9] • [Forward to chapter 11] • [Contents]
The Mountains of California

The Hetch Hetchy Valley

by John Muir

(*Sierra Club Bulletin*, Vol. VI, No. 4, January, 1908)

Note: A revised version of the following essay, omitting the first three paragraphs, and edited to emphasize the similarities of Hetch-Hetchy to Yosemite Valley, was eventually included as Chapter 16 of Muir's 1912 book, The Yosemite.

This article begins on page 211 with the Isaiah West Taber photo "Looking Up Hetch-Hetchy Valley from Sunrise Point;" the article proper begins on page 212. The last page of the particle is on page 220, followed on Page 221 and 222 with Extracts from the State Geologist's Yosemite Guidebook on the Hetch Hetchy Valley.

It is impossible to overestimate the value of wild mountains and mountain temples as places for people to grow in, recreation grounds for soul and body. They are the greatest of our natural resources, God's best gifts, but none, however high and holy, is beyond reach of the spoiler. In these ravaging money-mad days monopolizing San Francisco capitalists are now doing their best to destroy the Yosemite Park, the most wonderful of all our great mountain national parks. Beginning on the Tuolumne side, they are trying with a lot of sinful ingenuity to get the Government's permission to dam and destroy the Hetch-Hetchy Valley for a reservoir, simply that comparatively private gain may be made out of universal public loss, while of course the Sierra Club is doing all it can to save the valley. The Honorable Secretary of the Interior has not yet announced his decision in the case, but in all that has come and gone nothing discouraging is yet in sight on our side of the fight.

As long as the busy public in general knew little or nothing about the Hetch-Hetchy Valley, the few cunning drivers of the damming scheme, working in darkness like moles in a low-lying meadow, seemed confident of success; but when light was turned on and the truth became manifest that next to Yosemite, Hetch-Hetchy is the most wonderful and most important feature of the great park, that damming it would destroy it, render it inaccessible, and block the way through the wonderful Tuolumne Cañon to the grand central campground in the upper Tuolumne Valley, thousands from near and far came to our help, -- mountaineers, nature-lovers, naturalists. Most of our thousand club members wrote to the President or Secretary protesting against the destructive reservoir scheme while other sources of city water as pure or purer than the Hetch-Hetchy were available; so also did the Oregon and Washington mountaineering clubs and the Appalachian of Boston and public-spirited citizens everywhere. And the President, recognizing the need of beauty as well as bread and water in the life of the nation, far from favoring the destruction of any of our country's natural wonder parks and temples, is trying amid a host of other cares to save them all. Within a very short time he has saved the petrified forests of Arizona and the Grand Cañon, and in our own State the jagged peaks of San Benito county known as "The Pinnacles," making them national monuments or

parks to be preserved for the people forever. None, therefore, need doubt that everything possible will be done to save Hetch-Hetchy.

After my first visit, in the autumn of 1871, I have always called it the Tuolumne Yosemite, for it is a wonderfully exact counterpart of the great Yosemite, not only in its crystal river and sublime rocks and waterfalls, but in the gardens, groves, and meadows of its flower park-like floor. The floor of Yosemite is about 4,000 feet above the sea, the Hetch -Hetchy floor about 3,700; the walls of both are of gray granite, rise abruptly out of the flowery grass and groves are sculptured in the same style, and in both every rock is a glacial monument.

Standing boldly out from the south wall is a strikingly picturesque rock called "Kolana" by the Indians, the outermost of a group 2300 feet high, corresponding with the Cathedral Rocks of Yosemite both in relative position and form. On the opposite side of the Valley, facing Kolana, there is a counterpart of the El Capitan of Yosemite rising sheer and plain to a height of 1800 feet, and over its massive brow flows a stream which makes the most graceful fall I have ever seen. From the edge of the cliff it is perfectly free in the air for a thousand feet, then breaks up into a ragged sheet of cascades among the boulders of an earthquake talus. It is in all its glory in June, when the snow is melting fast, but fades and vanishes toward the end of summer. The only fall I know with which it may fairly be compared is the Yosemite Bridal Veil; but it excels even that favorite fall both in height and fineness of fairy-airy beauty and behavior. Lowlanders are apt to suppose that mountain streams in their wild career over cliffs lose control of themselves and tumble in a noisy chaos of mist and spray. On the contrary, on no part of their travels are they more harmonious and self-controlled. Imagine yourself in Hetch Hetchy on a sunny day in June, standing waist-deep in grass and flowers (as I have oftentimes stood), while the great pines sway dreamily with scarce perceptible motion. Looking northward across the Valley you see a plain, gray granite cliff rising abruptly out of the gardens and groves to a height of 1800 feet, and in front of it Tueeulala's silvery scarf burning with irised sun-fire in every fiber. In the first white outburst of the stream at the head of the fall there is abundance of visible energy, but it is speedily hushed and concealed in divine repose, and its tranquil progress to the base of the cliff is like that of downy feathers in a still room. Now observe the fineness and marvelous distinctness of the various sun-illumined fabrics into which the water is woven; they sift and float from form to form down the face of that grand gray rock in so leisurely and unconfused a manner that you can examine their texture, and patterns and tones of color as you would a piece of embroidery held in the hand. Near the head of the fall you see groups of booming, comet-like masses, their solid, white heads separate, their tails like combed silk interlacing among delicate shadows, ever forming and dissolving, worn out by friction in their rush through the air. Most of these vanish a few hundred feet below the summit, changing to the varied forms of cloud-like drapery. Near the bottom the width of the fall has increased from about twenty-five to a hundred feet. Here it is composed of yet finer tissues, and is still without a trace of disorder -- air, water and sunlight woven into stuff that spirits might wear.

So fine a fall might well seem sufficient to glorify any valley; but here, as in Yosemite, Nature seems in nowise moderate, for a short distance to the eastward of Tueeulala booms and thunders the great Hetch Hetchy Fall, Wapama, so near that you have both of them in full view from the same standpoint. It is the counterpart of the Yosemite Fall, but has a much greater volume of water, is about 1700 feet in height, and appears to be nearly vertical, though considerably inclined, and is dashed into huge outbounding bosses of foam on the projecting

shelves and knobs of its jagged gorge. No two falls could be more unlike -- Tueeulala out in the open sunshine descending like thistledown; Wapama in a jagged, shadowy gorge roaring and plundering, pounding its way with the weight and energy of an avalanche. Besides this glorious pair there is a broad, massive fall on the main river a short distance above the head of the Valley. Its position is something like that of the Vernal in Yosemite, and its roar as it plunges into a surging trout-pool may be heard a long way, though it is only about twenty feet high. There is also a chain of magnificent cascades at the head of the valley on a stream that comes in from the northeast, mostly silvery plumes, like the one between the Vernal and Nevada falls of Yosemite, half-sliding,half-leaping on bare glacier polished granite, covered with crisp clashing spray into wish the sunbeams pour with glorious effect. And besides all these a few small streams come over the walls here and there, leaping from ledge to ledge with birdlike song and watering many a hidden cliff-garden and fernery, but they are too unshowy to be noticed in so grand a place.

The correspondence between the Hetch Hetchy walls in their trends, sculpture, physical structure, and general arrangement of the main rock-masses [and those of the Yosemite Valley] has excited the wondering admiration of every observer. We have seen that the El Capitan and Cathedral rocks occupy the same relative positions In both valleys; so also do their Yosemite Points and North Domes. Again that part of the Yosemite north wall immediately to the east of the Yosemite Fall has two horizontal benches timbered with golden-cup oak about 500 and 1500 feet above the floor. Two benches similarly situated and timbered occur on the same relative portion of the Hetch Hetchy north wall, to the east of Wapama Fall, and on no other. The Yosemite is bounded at the head by the great Half Dome. Hetch Hetchy is bounded in the same way though its head rock is far less wonderful and sublime in form.

The floor of the Valley is about three and a half miles long and from a fourth to half a mile wide. The lower portion is mostly a level meadow about a mile long, with the trees restricted to the sides, and partially separated from the upper forested portion by a low bar of glacier-polished granite across which the river breaks in rapids.

The principal trees are the yellow and sugar pines, Sabine pine, incense cedar, Douglas spruce, silver fir, the California and gold-cup oaks, balm of Gilead poplar, Nuttall's flowering dogwood, alder, maple, laurel, tumion, etc. The most abundant and influential are the great yellow pines, the tallest over two hundred feet in height, and the oaks with massive rugged trunks four to six or seven feet in diameter, and broad arching heads, assembled in magnificent groves. The shrubs forming conspicuous flowery clumps and tangles are manzanita, azalea, spiraea, brier-rose, ceanothus, calycanthus, philadelphus, wild cherry, etc.; with abundance of showy and fragrant herbaceous plants growing about them or out In the open in beds by themselves -- lilies, Mariposa tulips, brodiaeas, orchids -- several species of each,-- iris, spraguea, draperia, collomia, collinsia, castilleia, nemophila, larkspur, columbine, goldenrods, sunflowers, and mints of many species, honeysuckle, etc. etc. Many fine ferns dwell here also, especially the beautiful and interesting rock-ferns -- pellaea, and cheilanthes of several species -- fringing and rosetting dry rock-piles and ledges; woodwardia and asplenium on damp spots with fronds six or seven feet high; the delicate maidenhair in mossy nooks by the falls, and the sturdy, broad-shouldered pteris beneath the oaks and pines.

It appears therefore that Hetch-Hetchy Valley, far from being a plain, common, rock-bound

meadow, as many who have not seen it seem to suppose, is a grand landscape garden, one of Nature's rarest and most precious mountain mansions. As in Yosemite, the sublime rocks of its walls seem to the nature-lover to glow with life, whether leaning back in repose or standing erect in thoughtful attitudes, giving welcome to storms and calms alike. And how softly these mountain rocks are adorned, and how fine and reassuring the company they keep --their brows in the sky, their feet set in groves and gay emerald meadows, a thousand flowers leaning confidingly against their adamantine bosses, while birds, bees, and butterflies help the river and waterfalls to stir all the air into music -- things frail and fleeting and types of permanence meeting here and blending, as if into this glorious mountain temple Nature had gathered here choices treasures, whether great or small, to draw her lovers into close confiding communion with her.

Strange to say, this is the mountain temple that is now in danger of being dammed and made into a reservoir to help supply San Francisco with water and light. This use of the valley, so destructive and foreign to its proper park use, has long been planned and prayed for, and is still being prayed for by the San Francisco board of supervisors, not because water as pure and abundant cannot be got from adjacent sources outside the park - for it can, -- but seemingly only because of the comparative cheapness of the dam required.

Garden- and park-making goes on everywhere with civilization, for everybody needs beauty as well as bread, places to play in and pray in, where Nature may heal and cheer and give strength to body and soul. This natural beauty-hunger is displayed in poor folks' window-gardens made up of a few geranium slips in broken cups, as well as in the costly lily gardens of the rich, the thousands of spacious city parks and botanical gardens, and in our magnificent National parks -- the Yellowstone, Yosemite, Sequoia, etc. -- Nature's own wonderlands, the admiration and joy of the world. Nevertheless, like everything else worth while, however sacred and precious and well-guarded, they have always been subject to attack, mostly by despoiling gainseekers, -- mischief-makers of every degree from Satan to supervisors, lumbermen, cattlemen, farmers, etc., eagerly trying to make everything dollarable, often thinly disguised in smiling philanthropy, calling pocket-filling plunder "Utilization of beneficent natural resources, that man and beast may be fed and the dear Nation grow great." Thus long ago a lot of enterprising merchants made part of the Jerusalem temple into a place of business instead of a place of prayer, changing money, buying and selling cattle and sheep and doves. And earlier still, the Lord's garden in Eden, and the first forest reservation, including only one tree, was spoiled. And so to some extent have all our reservations and parks. Ever since the establishment of the Yosemite National Park by act of Congress, October 8, 1890, constant strife has been going on around its borders and I suppose this will go on as part of the universal battle between right and wrong, however its boundaries may be shorn or its wild beauty destroyed. The first application to the Government by the San Francisco Supervisors for the use of Lake Eleanor and the Hetch Hetchy Valley was made in 1903, and denied December 22nd of that year by the Secretary of the Interior. In his report on this case he well says: "Presumably the Yosemite National Park was created such by law because of the natural objects, of varying degrees of scenic importance, located within its boundaries, inclusive alike of its beautiful small lakes, like Eleanor, and its majestic wonders, like Hetch-Hetchy and Yosemite Valley. It is the aggregation of such natural scenic features that makes the Yosemite Park a wonderland which the Congress of the United States sought by law to preserve for all coming time as nearly as practicable in the condition fashioned by the hand of the Creator -- a worthy object of national

pride and a source of healthful pleasure and rest for the thousands of people who may annually sojourn there during the heated months."

The most delightful and wonderful campgrounds in the Park are the three great valleys -- Yosemite, Hetch-Hetchy, and Upper Tuolumne; and they are also the most important places with reference to their positions relative to the other great features -- the Merced and Tuolumne Cañons, and the High Sierra peaks and glaciers, etc., at the head of the rivers. The main part of the Tuolumne Valley is a beautiful spacious flowery lawn four or five miles long, surrounded by magnificent snowy mountains. It is about 8500 feet above the sea, and forms the grand central High Sierra camp ground from which excursions are made to the noble mountains, domes, glaciers, etc.; across the Range to the Mono Lake and volcanoes and down the Tuolumne Cañon to Hetch Hetchy. But should Hetch Hetchy be submerged, as pro-posed, not only would it be made utterly inaccessible, but the sublime cañon way to the heart of the High Sierra would be hopelessly blocked. None, as far as I have learned, of all the thousands who have seen the park is in favor of this destructive water scheme.

My last visit to the Valley was made in the autumn of last year [1907], with William Keith, the artist. The leaf-colors were then ripe, and the great godlike rocks in repose seemed to glow with life. The artist, under their spell, wandered day after day along the beautiful river and through the groves and gardens, studying the wonderful scenery; and, after making about forty sketches, declared with enthusiasm that in picturesque beauty and charm Hetch Hetchy surpassed even Yosemite.

That any one would try to destroy such a place seemed impossible; but sad experience shows that there are people good enough and bad enough for anything. The proponents of the dam scheme bring forward a lot of bad arguments to prove that the only righteous thing for Hetch-Hetchy is its destruction. These arguments are curiously like those of the devil devised for the destruction of the first garden -- so much of the very best Eden fruit going to waste; so much of the best Tuolumne water. Very few of their statements are even partly true, and all are misleading. Thus, Hetch Hetchy, they say, is a "low-lying meadow."

On the contrary, it is a high-lying natural landscape garden.

"It is a common minor feature, like thousands of others."

On the contrary, it is a very uncommon feature; after Yosemite, the rarest and in many ways the most important in the park.

"Damming and submerging it 175 feet deep would enhance its beauty by forming a crystal-clear lake."

Landscape gardens, places of recreation and worship, are never made beautiful by destroying and burying them. The beautiful lake, forsooth, should be only an eyesore, a dismal blot on the landscape, like many others to be seen in the Sierra. For, instead of keeping it at the same level all the year, allowing Nature to make new shores, it would, of course, be full only a month or two in the spring, when the snow is melting fast; then it would be gradually drained, exposing the slimy sides of the basin and shallower parts of the bottom, with the gathered drift and waste, death and decay of the upper basins, caught here instead of being swept on to decent

natural burial along the banks of the river or in the sea. Thus the Hetch Hetchy dam-lake would be only a rough imitation of a natural lake for a few of the spring months, an open mountain sepulcher for the others.

"Hetch Hetchy water is the purest, wholly unpolluted, and forever unpollutable."

On the contrary, excepting that of the Merced below Yosemite, it is less pure than that of most of the other Sierra streams, because of the sewerage of camp grounds draining into it, especially of the Big Tuolumne Meadows campgrounds, where hundreds of tourists and mountaineers, with their animals, are encamped for months every summer, soon to be followed by thousands of travelers from all the world.

These temple destroyers, devotees of ravaging commercialism, seem to have a perfect contempt for Nature, and, instead of lifting their eyes to the mountains, lift them to dams and town skyscrapers.

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

Other John Muir essays about Hetch Hetchy:

- John Muir's First Essay about Hetch-Hetchy in the Boston *Weekly Transcript* , 1873.
- Chapter 16 of Muir's 1912 book, The Yosemite.

- Sierra Club Hetch Hetchy Home Page
- John Muir Exhibit - Writings of John Muir

John Muir Writings

Save the Redwoods [1]

by John Muir

Sierra Club Bulletin Volume XI Number 1 - January, 1920

NOTE: In his intimate acquaintance with nature John Muir recognized and loved everything that was natural and honest, but his interest focused upon the things which represented the most splendid expressions of creative power. Not only did he instinctively select for close personal companionship the elements of nature that had most to give for him, but, as no other western naturalist has done, he set forth their fullest meaning in the language of the people.

Of all Muir's special interests in nature, it is probable that none made to him a stronger appeal than the giant Sequoias of the Sierra and Coast Range forests. It was his firm conviction that they represented the supremest examples of majesty among all living things, and his journey around the earth to compare the Big Trees with the trees of the world left him with settled conviction regarding the correctness of this view. For many years he gave himself to the protection of these "Kings of the forest, the noblest of a noble race." At this time of national movement for the preservation of these forests through the Save-the-Redwoods League, it is particularly fitting that we present the sentiments written years ago, in support of just such a movement, by the friend who fought so hard, so faithfully, and so long in this good cause.
— JOHN CAMPBELL MERRIAM,
Chairman, Executive Committee of the Save-the-Redwoods League.

We are often told that the world is going from bad to worse, sacrificing everything to mammon. But this righteous uprising in defense of God's trees in the midst of exciting politics and wars is telling a different story, and every Sequoia, I fancy, has heard the good news and is waving its branches for joy. The wrongs done to trees, wrongs of every sort, are done in the darkness of ignorance and unbelief, for when light comes the heart of the people is always right. Forty-seven years ago one of these Calaveras King Sequoias was laboriously cut down, that the stump might be had for a dancing-floor. Another, one of the finest in the grove, more than three hundred feet high, was skinned alive to a height of one hundred and sixteen feet from the ground and the bark sent to London to show how fine and big that Calaveras tree was—as sensible a scheme as skinning our great men would be to prove their greatness. This grand tree is of course dead, a ghastly disfigured ruin, but it still stands erect and holds forth its majestic arms as if alive and saying, "Forgive them; they know not what they do." Now some millmen want to cut all the Calaveras trees into lumber and money. But we have found a better use for them. No doubt these trees would make good lumber after passing through a sawmill, as George Washington after passing through the hands of a French cook would have made good food. But both for Washington and the tree that bears his name higher uses have been found.

Could one of these Sequoia Kings come to town in all its godlike majesty so as to be strikingly seen and allowed to plead its own cause, there would never again be any lack of defenders. And the same may be said of all the other Sequoia groves and forests of the Sierra with their companions and the noble *Sequoia sempervirens,* or redwood, of the coast mountains.

In a general view we find that the *Sequoia gigantea*, or Big Tree, is distributed in a widely interrupted belt along the west flank of the Sierra, from a small grove on the middle fork of the American River to the head of Deer Creek, a distance of about two hundred and sixty miles, at an elevation of about five thousand to a little over eight thousand feet above the sea. From the American River grove to the forest on Kings River the species occurs only in comparatively small isolated patches or groves so sparsely distributed along the belt that three of the gaps in it are from forty to sixty miles wide. From Kings River southward the Sequoia is not restricted to mere groves, but extends across the broad rugged basins of the Kaweah and Tule rivers in majestic forests a distance of nearly seventy miles, the continuity of this portion of the belt being but slightly broken save by the deep cañons.

In these noble groves and forests to the southward of the Calaveras Grove the axe and saw have long been busy, and thousands of the finest Sequoias have been felled, blasted into manageable dimensions, and sawed into lumber by methods destructive almost beyond belief, while fires have spread still wider and more lamentable ruin. In the course of my explorations twenty-five years ago, I found five sawmills located on or near the lower margin of the Sequoia belt, all of which were cutting more or less Big Tree lumber, which looks like the redwood of the coast, and was sold as redwood. One of the smallest of these mills in the season of 1874 sawed two million feet of Sequoia lumber. Since that time other mills have been built among the Sequoias, notably the large ones on Kings River and the head of the Fresno. The destruction of these grand trees is still going on.

On the other hand, the Calaveras Grove for forty years has been faithfully protected by Mr. Sperry, and with the exception of the two trees mentioned above is still in primeval beauty. The Tuolumne and Merced groves near Yosemite, the Dinky Creek grove, those of the General Grant National Park and the Sequoia National Park, with several outstanding groves that are nameless on the Kings, Kaweah, and Tule river basins, and included in the Sierra forest reservation, have of late years been partially protected by the Federal Government; while the well-known Mariposa Grove has long been guarded by the State.

For the thousands of acres of Sequoia forest outside of the reservation and national parks, and in the hands of lumbermen, no help is in sight. Probably more than three times as many Sequoias as are contained in the whole Calaveras Grove have been cut into lumber every year for the last twenty-six years without let or hindrance, and with scarce a word of protest on the part of the public, while at the first whisper of the bonding of the Calaveras Grove to lumbermen most everybody rose in alarm. This righteous and lively indignation on the part of Californians after the long period of deathlike apathy, in which they have witnessed the destruction of other groves unmoved, seems strange until the rapid growth that right public opinion has made during the last few years is considered and the peculiar interest that attaches to the Calaveras giants. They were the first discovered and are best known. Thousands of travelers from every country have come to pay them tribute of admiration and praise, their reputation is world-wide, and the names of great men have long been associated with them—Washington, Humboldt, Torrey and Gray, Sir Joseph Hooker, and others. These kings of the forest, the noblest of a noble race, rightly belong to the world, but as they are in California we cannot escape responsibility as their guardians. Fortunately the American people are equal to this trust, or any other that may arise, as soon as they see it and understand it.

Any fool can destroy trees. They cannot defend themselves or run away. And few destroyers of trees ever plant any; nor can planting avail much toward restoring our grand aboriginal giants. It took more than three thousand years to make some of the oldest of the Sequoias, trees that are still standing in perfect strength and beauty, waving and singing in the mighty forests of the Sierra. Through all the eventful centuries since Christ's time, and long before that, God has cared for these trees, saved them from drought, disease, avalanches, and a thousand storms; but he cannot save them from sawmills and fools; this is left to the American people. The news from Washington is encouraging. On March third [1905?] the House passed a bill providing for the Government acquisition of the Calaveras giants. The danger these Sequoias have been in will do good far beyond the boundaries of the Calaveras Grove, in saving other groves and forests, and quickening interest in forest affairs in general. While the iron of public sentiment is hot let us strike hard. In particular, a reservation or national park of the only other species of Sequoia, the *sempervirens,* or redwood, hardly less wonderful than the *gigantea,* should be quickly secured. It will have to be acquired by gift or purchase, for the Government has sold every section of the entire redwood belt from the Oregon boundary to below Santa Cruz.

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1. Found among Muir's papers after his death and now published for the first time. See editorial, page 87:

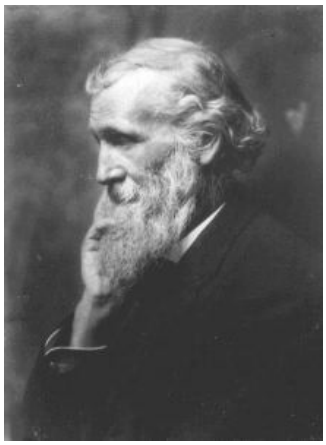
"... a brief and moving plea for the saving of the Sequoias, written... years ago, when the Calaveras Grove

was in danger. It seems to have been almost providentially preserved among his papers for the supreme occasion which has now arisen,. . . It will be noted that he long ago proposed doing the very thing which is now being attempted after a lapse of years and after thousands of acres of the finest redwood forests have become an ugly fire-bitten ruin. . . . We of this State cannot escape responsibility either for their destruction or their preservation. W.F.B. [William Frederick Badè]

Source: *Sierra Club Bulletin* Volume XI Number 1 - January 1920, pp. 1-4.

Scanning and OCR by Richard Cellarius.

John Muir: A Brief Biography



John Muir - farmer, inventor, sheepherder, naturalist, explorer, writer, and conservationist - was born on April 21, 1838 in Dunbar, Scotland. Until the age of eleven he attended the local schools of that small coastal town. In 1849, the Muir family emigrated to the United States, settling first at Fountain Lake and then moving to Hickory Hill Farm near Portage, Wisconsin.

Muir's father was a harsh disciplinarian and worked his family from dawn to dusk. Whenever they were allowed a short period away from the plow and hoe, Muir and his younger brother would roam the fields and woods of the rich Wisconsin countryside. John became more and more the loving observer of the natural word. He also became an inventor, a carver of curious but practical mechanisms in wood. He made clocks that kept accurate time and created a wondrous device that tipped him out of bed before dawn.

In 1860, Muir took his inventions to the state fair at Madison, where he won admiration and prizes. Also that year he entered the University of Wisconsin. He made fine grades, but after three years left Madison to travel the northern United States and Canada, odd-jobbing his way through the yet unspoiled land.

In 1867, while working at a carriage parts shop in Indianapolis, Muir suffered a blinding eye injury that would change his life. When he regained his sight one month later, Muir resolved to turn his eyes to the fields and woods. There began his years of wanderlust. He walked a thousand miles from Indianapolis to the Gulf of Mexico. He sailed to Cuba , and later to Panama, where he crossed the Isthmus and sailed up the West Coast, landing in San Francisco in March, 1868. From that moment on, though he would travel around the world, California became his home.

It was California's Sierra Nevada and Yosemite that truly claimed him. In 1868, he walked across the San Joaquin Valley through waist-high wildflowers and into the high country for the first time. Later he would write: "Then it seemed to me the Sierra should be called no the Nevada, or Snowy Range, but the Range of Light...the most divinely beautiful of all the mountain chains I have ever seen." He herded sheep through that first summer and made his home in Yosemite.

By 1871 he had found living glaciers in he Sierra and had conceived his controversial theory of the glaciation of Yosemite Valley. He began to be known throughout the country. Famous men of the time - Joseph LeConte, Asa Gray and Ralph Waldo Emerson - made their way to the door of his pine cabin.

Beginning in 1874, a series of articles by Muir entitled "Studies in the Sierra" launched his successful career as a writer. He left the mountains and lived for awhile in Oakland, California. From there he took many trips, including his first to Alaska in 1879, where he discovered Glacier Bay. In 1880, he married Louie Wanda Strentzel and moved to Martinez, California , where they raised their two daughters, Wanda and Helen. Settling down to some measure of domestic life, Muir went into partnership with his father-in-law and managed the family fruit ranch with great success.

But ten years of active ranching did not quell Muir's wanderlust. His travels took him to Alaska many more times, to Australia, South America, Africa, Europe, China, Japan, and of course, again and again to his beloved Sierra Nevada. .

In later years he turned more seriously to writing, publishing 300 articles and 10 major books that recounted his travels, expounded his naturalist philosophy, and beckoned everyone to "Climb the mountains and get their good tidings." Muir's love of the high country gave his writings a spiritual quality. His readers, whether they be presidents, congressmen, or plain folks, were inspired and often moved to action by the enthusiasm of Muir's own unbounded love of nature.

Through a series of articles appearing in *Century* magazine, Muir drew attention to the devastation of mountain meadows and forests by sheep and cattle. With the help of *Century*'s associate editor, Robert Underwood Johnson, Muir worked to remedy this destruction. In 1890, due in large part to the efforts of Muir and Johnson, an act of Congress created Yosemite National Park. Muir was also personally involved in the creation of Sequoia , Mount Rainier , Petrified Forest and Grand Canyon national parks. Muir deservedly is often called the "Father of Our National Park System ".

Johnson and others suggested to Muir that an association be formed to protect the newly created Yosemite National Park from the assaults of stockmen and others who would diminish its

The John Muir Exhibit Home

About John Muir

Biographical Information

Tributes

Writings of John Muir

Media

Educational Resources

Get Involved

boundaries. In 1892, Muir and a number of his supporters founded the Sierra Club to, in Muir's words, "do something for wildness and make the mountains glad." Muir served as the Club's president until his death in 1914.

In 1901, Muir published *Our National Parks* , the book that brought him to the attention of President Theodore Roosevelt. In 1903, Roosevelt visited Muir in Yosemite. There, together, beneath the trees, they laid the foundation of Roosevelt's innovative and notable conservation programs.

Muir and the Sierra Club fought many battles to protect Yosemite and the Sierra Nevada, the most dramatic being the campaign to prevent the damming of the Hetch Hetchy Valley within Yosemite National Park. In 1913, after years of effort, the battle was lost and the valley that Muir likened to Yosemite itself was doomed to become a reservoir to supply the water needs of a growing San Francisco. The following year, after a short illness, Muir died in a Los Angeles hospital after visiting his daughter Wanda.

John Muir was perhaps this country's most famous and influential naturalist and conservationist. He taught the people of his time and ours the importance of experiencing and protecting our natural heritage. His words have heightened our perception of nature. His personal and determined involvement in the great conservation questions of the day was and remains an inspiration for environmental activists everywhere.

Return to The Life and Contributions of John Muir

Home | Alphabetical Index | What's New
