8-1-1899

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John Muir

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The Yosemite National Park.

Of all the mountain ranges I have climbed, I like the Sierra Nevada the best. Though extremely rugged, with its main features on the grandest scale in height and depth, it is nevertheless easy of access and hospitable; and its marvelous beauty, displayed in striking and alluring forms, woos the admiring wanderer on and on, higher and higher, charmed and enchanted. Benevolent, solemn, fateful, pervaded with divine light, every landscape glows like a countenance hallowed in eternal repose; and every one of its living creatures, clad in flesh and leaves, and every crystal of its rocks, whether on the surface shining in the sun or buried miles deep in what we call darkness, is throbbing and pulsing with the heartbeats of God. All the world lies warm in one heart, yet the Sierra seems to get more light than other mountains. The weather is mostly sunshine embellished with magnificent storms, and nearly everything shines from base to summit,—the rocks, streams, lakes, glaciers, irised falls, and the forests of silver fir and silver pine.

And how bright is the shining after summer showers and dewy nights, and after frosty nights in spring and autumn when the morning sunbeams are pouring through the crystals on the bushes and grass, and in winter through the snow-laden trees! The average cloudiness for the whole year is perhaps less than ten hundredths. Scarcely a day of all the summer is dark, though there is no lack of magnificent thundering cumuli. They rise in the warm midday hours, mostly over the middle region, in June and July, like new mountain ranges, higher Sierras, mightily augmenting the grandeur of the scenery while giving rain to the forests and gardens and bringing forth their fragrance. The wonderful weather and beauty inspire everybody to be up and doing. Every summer day is a workday to be confidently counted on, the short dashes of rain forming, not interruptions, but rests. The big blessed storm days of winter, when the whole range stands white, are not a whit less inspiring and kind. Well may the Sierra be called the Range of Light, not the Snowy Range; for only in winter is it white, while all the year it is bright.

Of this glorious range the Yosemite National Park is a central section, thirty-six miles in length and forty-eight miles in breadth. The famous Yosemite Valley lies in the heart of it, and it includes the head waters of the Tuolumne and Merced rivers, two of the most songful streams in the world; innumerable lakes and waterfalls and smooth silky lawns; the noblest forests, the loftiest granite domes, the deepest ice-sculptured canyons, the brightest crystalline pavements, and snowy mountains soaring into the sky twelve and thirteen thousand feet, arrayed in open ranks and spiry pinnacled groups partially separated by tremendous canyons and amphitheatres; gardens on their sunny brows, avalanches thundering down their long white slopes, cataracts roaring gray and foaming in the crooked
rugged gorges, and glaciers in their shadowy recesses working in silence, slowly completing their sculpture; newborn lakes at their feet, blue and green, free or encumbered with drifting icebergs like miniature Arctic Oceans, shining, sparkling, calm as stars.

Nowhere will you see the majestic operations of nature more clearly revealed beside the frailest, most gentle and peaceful things. Nearly all the park is a profound solitude. Yet it is full of charming company, full of God's thoughts, a place of peace and safety amid the most exalted grandeur and eager enthusiastic action, a new song, a place of beginnings abounding in first lessons on life, mountain-building, eternal, invincible, unbreakable order; with sermons in stones, storms, trees, flowers, and animals brimming of humanity. During the last glacial period, just past, the former features of the range were rubbed off as a chalk sketch from a blackboard, and a new beginning was made. Hence the wonderful clearness and freshness of the rocky pages.

But to get all this into words is a hopeless task. The leanest sketch of each feature would need a whole chapter. Nor would any amount of space, however industriously scribbled, be of much avail. To defrauded town toilers, parks in magazine articles are like pictures of bread to the hungry. I can write only hints to incite good wanderers to come to the feast.

While this glorious park embraces big, generous samples of the very best of the Sierra treasures, it is, fortunately, at the same time, the most accessible portion. It lies opposite San Francisco, at a distance of about one hundred and forty miles. Railroads connected with all the continent reach into the foothills, and three good carriage roads, from Big Oak Flat, Coulterville, and Raymond, run into Yosemite Valley. Another, called the Tioga road, runs from Crocker's Station on the Yosemite Big Oak Flat road, near the Tuolumne Big Tree Grove, right across the park to the summit of the range by way of Lake Tenaya, the Big Tuolumne Meadows, and Mount Dana. These roads, with many trails that radiate from Yosemite Valley, bring most of the park within reach of everybody, well or half well.

The three main natural divisions of the park, the lower, middle, and alpine regions, are fairly well defined in altitude, topographical features, and vegetation. The lower, with an average elevation of about five thousand feet, is the region of the great forests, made up of sugar pine, the largest and most beautiful of all the pines in the world; the silvery yellow pine, the next in rank; Douglas spruce, libocedrus, the white and red silver firs, and the Sequoia gigantea, or "big tree," the king of conifers, the noblest of a noble race. On warm slopes next the foothills there are a few sabine nut pines; oaks make beautiful groves in the cañon valleys; and poplar, alder, maple, laurel, and Nuttall's flowering dogwood shade the banks of the streams. Many of the pines are more than two hundred feet high, but they are not crowded together. The sunbeams streaming through their feathery arches brighten the ground, and you walk beneath the lofty radiant ceiling in devout subdued mood, as if you were in a grand cathedral with mellow lights sifting through colored windows, while the flowery pillared aisles open enchanting vistas in every direction. Scarcely a peak or ridge in the whole region rises bare above the forests, though they are thinly planted in some places where the soil is shallow. From the cool breezy heights you look abroad over a boundless waving sea of evergreens, covering hill and ridge and smooth-flowing slope as far as the eye can reach, and filling every hollow and down-plunging ravine in glorious triumphant exuberance.

Perhaps the best general view of the pine forests of the park, and one of the
best in the range, is obtained from the top of the Merced and Tuolumne divide near Hazel Green. On the long, smooth, finely folded slopes of the main ridge, at a height of five to six thousand feet above the sea, they reach most perfect development, and are marshaled to view in magnificent towering ranks, their colossal spires and domes and broad palm-like crowns, deep in the kind sky, rising above one another, — a multitude of giants in perfect health and beauty, — sun-fed mountaineers rejoicing in their strength, chanting with the winds, in accord with the falling waters. The ground is mostly open and inviting to walkers. The fragrant chamæbasia is outspread in rich carpets miles in extent; the manzanita, in orchard-like groves, covered with pink bell-shaped flowers in the spring, grows in openings facing the sun, hazel and buckthorn in the dells; warm browns are purple with mint, yellow with sunflowers and violets; and tall lilies ring their bells around the borders of meadows and along the ferny mossy banks of the streams. Never was mountain forest more lavishly furnished.

Hazel Green is a good place quietly to camp and study, to get acquainted with the trees and birds, to drink the pure water and weather, and to watch the changing lights of the big charmed days. The rose light of the dawn creeping higher among the stars changes to daffodil yellow; then come the level enthusiastic sunbeams pouring across the feathery ridges, touching pine after pine, spruce and fir, libocedrus and lordly sequoia, — searching every recess, until all are awakened and warmed. In the white noon they shine in silvery splendor, every needle and cell in bole and branch thrilling and tingling with ardent life; and the whole landscape glows with consciousness, like the face of a god. The hours go by uncounted. The evening flames with purple and gold. The breeze that has been blowing from the lowlands dies away; and far and near the mighty host of trees baptized in the purple flood stand hushed and thoughtful, awaiting the sun’s blessing and farewell, — as impressive a ceremony as if it were never to rise again. When the daylight fades, the night breeze from the snowy summits begins to blow, and the trees, waving and rustling beneath the stars, breathe free again.

It is hard to leave such camps and woods; nevertheless, to the large majority of travelers the middle region of the park is still more interesting, for it has the most striking features of all the Sierra scenery, — the deepest sections of the famous cañons, of which the Yosemite Valley, Hetch-Hetchy Valley, and many smaller ones are wider portions, with level parklike floors and walls of immense height and grandeur of sculpture. This middle region holds also the greater number of the beautiful glacier lakes and glacier meadows, the great granite domes, and the most brilliant and most extensive of the glacier pavements. And though in large part it is severely rocky and bare, it is still rich in trees. The magnificent silver fir (Abies magnifica), which ranks with the giants, forms a continuous belt across the park above the pines at an elevation of from seven to nine thousand feet, and north and south of the park boundaries to the extremities of the range, only slightly interrupted by the main cañons. The two-leaved or tamarack pine makes another, less regular belt along the upper margin of the region, while between these two belts, and mingling with them in groves or scattered, are the Patton hemlock, the most graceful of evergreens; the noble mountain pine; the Jeffrey form of the yellow pine, with big cones and long needles; and the brown, burly, sturdy Western juniper. All these except the juniper, which grows on bald rocks, have plenty of flowery brush about them, and gardens in open spaces.

Here, too, lies the broad, shining, heavily sculptured region of primeval
granite, which best tells the story of the

glacial period on the Pacific side of the

continent. No other mountain chain on

the globe, as far as I know, is so rich

as the Sierra in bold, striking, well-
preserved glacial monuments, easily un-
derstood by anybody capable of patient
observation. Every feature is more or

less glacial, and this park portion of the

range is the brightest and clearest of all.

Not a peak, ridge, dome, cañon, lake

basin, garden, forest, or stream but in

some way explains the past existence

and modes of action of flowing, grind-
ing, sculpturing, soil-making, scenery-

making ice. For, notwithstanding the

postglacial agents — air, rain, frost,
rivers, earthquakes, avalanches — have
been at work upon the greater part of
the range for tens of thousands of stormy
years, engraving their own characters

over those of the ice, the latter are so

heavily emphasized and enduring that
they still rise in sublime relief, clear and
legible through every after inscription.
The streams have traced only shallow
wrinkles as yet, and avalanche, wind,
rain, and melting snow have made blurs
and scars; but the change effected on
the face of the landscape is not greater
than is made on the face of a mountain-
ner by a single year of weathering.

Of all the glacial phenomena present-
ed here, the most striking and attractive
to travelers are the polished pavements,
because they are so beautiful, and their
beauty is of so rare a kind, — unlike
any part of the coarse earthy lowlands
where people dwell and earn their bread.
They are simply flat or gently undulat-
ing areas of solid resisting granite, the
unchanged surface over which the ancient
 glaciers flowed. They are found in the
most perfect condition at an elevation of
from eight to nine thousand feet above
sea level. Some are miles in extent,
only slightly blurred or scarred by spots
that have at last yielded to the weather;
while the best preserved portions are
brilliantly polished, and reflect the sun-
beams as calm water or glass, shining
as if rubbed and burnished every day,

notwithstanding they have been exposed
to plashing corroding rains, dew, frost,
and melting sloppy snow for thousands
of years.

The attention of hunters and pro-
spectors, who see so much in their wild
journeys, is seldom attracted by mo-

tainous, however regular and artificial-
looking; or rocks, however boldly sculp-
tured; or cañons, however deep and
sheer-walled. But when they come to
these pavements, they go down on their
knees and rub their hands admiringly

on the glistening surface, and try hard
to account for its mysterious smoothness

and brightness. They may have seen
the winter avalanches come down the
mountains, through the woods, sweeping
away the trees and scouring the ground;
but they conclude that this cannot be
the work of avalanches, because the
strike show that the agent, whatever it
was, flowed along and around and over
the top of high ridges and domes, and
also filled the deep cañons. Neither
can they see how water could be the
agent, for the strange polish is found
thousands of feet above the reach of
any conceivable flood. Only the winds
seem capable of moving over the face of
the country in the directions indicated
by the lines and grooves.

The pavements are particularly fine
around Lake Tenaya, and have suggest-
ed the Indian name Py-we-ack, the Lake
of the Shining Rocks. Indians seldom
trouble themselves with geological ques-
tions, but a Mono Indian once came to
me and asked if I could tell him what
made the rocks so smooth at Tenaya.
Even dogs and horses, on their first jour-
neys into this region, study geology to
the extent of gazing wonderingly at the

strange brightness of the ground, and
pawing it and smelling it, as if afraid
of falling or sinking.

In the production of this admirable
hard finish, the glaciers in many places
exerted a pressure of more than a hundred tons to the square foot, planing down granite, slate, and quartz alike, showing their structure, and making beautiful mosaics where large feldspar crystals form the greater part of the rock. On such pavements the sunshine is at times dazzling, as if the surface were of burnished silver.

Here, also, are the brightest of the Sierra landscapes in general. The regions lying at the same elevation to the north and south were perhaps subjected to as long and intense a glaciation, but because the rocks are less resisting their polished surfaces have mostly given way to the weather, leaving here and there only small imperfect patches on the most enduring portions of cañon walls protected from the action of rain and snow, and on hard bosses kept comparatively dry by boulders. The short steeply inclined cañons of the east flank of the range are in some places brightly polished, but they are far less magnificent than those of the broad west flank.

One of the best general views of the middle region of the park is to be had from the top of a majestic dome which long ago I named the Glacier Monument. It is situated a few miles to the north of Cathedral Peak, and rises to a height of about fifteen hundred feet above its base and ten thousand above the sea. At first sight it seems sternly inaccessible, but a good climber will find that it may be scaled on the south side. Approaching it from this side you pass through a dense bryanthus-fringed grove of Patton hemlock, catching glimpses now and then of the colossal dome towering to an immense height above the dark evergreens; and when at last you have made your way across woods, wading through azalea and ledum thickets, you step abruptly out of the tree shadows and mossy leafy softness upon a bare porphyry pavement, and behold the dome unveiled in all its grandeur. Fancy a nicely proportioned monument, eight or ten feet high, hewn from one stone, standing in a pleasure ground; magnify it to a height of fifteen hundred feet, retaining its simplicity of form and fineness, and cover its surface with crystals: then you may gain an idea of the sublimity and beauty of this ice-burnished dome, one of many adorning this wonderful park.

In making the ascent, one finds that the curve of the base rapidly steepens, until one is in danger of slipping; but feldspar crystals, two or three inches long, that have been weathered into relief, afford slight footholds. The summit is in part burned, like the sides and base, the striae and scratches indicating that the mighty Tuolumne Glacier, two or three thousand feet deep, overwhelmed it while it stood firm, like a boulder at the bottom of a river. The pressure it withstood must have been enormous. Had it been less solidly built, it would have been ground and crushed into moraine fragments, like the general mass of the mountain flank in which at first it lay imbedded; for it is only a hard residual knob or knot with a concentric structure of superior strength, brought into relief by the removal of the less resisting rock about it,—an illustration in stone of the survival of the strongest and most favorably situated.

Hardly less wonderful, when we contemplate the storms it has encountered since first it saw the light, is its present unwasted condition. The whole quantity of postglacial wear and tear it has suffered has not diminished its stature a single inch, as may be readily shown by measuring from the level of the unchanged polished portions of the surface. Indeed, the average postglacial denudation of the entire region, measured in the same way, is found to be less than two inches,—a mighty contrast to that of the ice; for the glacial denudation here has been not less than a mile; that is, in developing the present
The Yosemite National Park.

lands, an amount of rock a mile in average thickness has been silently carried away by flowing ice during the last glacial period.

A few erratic boulders nicely poised on the rounded summit of the monument tell an interesting story. They came from a mountain on the crest of the range, about twelve miles to the eastward, floating like chips on the frozen sea, and were stranded here when the top of the monument emerged to the light of day, while the companions of these boulders, whose positions chanced to be over the slopes where they could not find rest, were carried farther on by the shallowing current.

The general view from the summit consists of a sublime assemblage of ice-born mountains and rocks and long waveering ridges, lakes and streams and meadows, moraines in wide-sweeping belts, and beds covered and dotted with forests and groves,—hundreds of square miles of them composed in wild harmony. The snowy mountains on the axis of the range, mostly sharp-peaked and crested, rise in noble array along the sky to the eastward and northward; the gray-pillared Hoffman spur and the Yosemite domes and a countless number of others to the westward; Cathedral Peak with its many spires and companion peaks and domes to the southward; and a smooth billowy multitude of rocks, from fifty feet or less to a thousand feet high, which from their peculiar form seem to be rolling on westward, fill most of the middle ground. Immediately beneath you are the Big Tuolumne Meadows, with an ample swath of dark pine woods on either side, enlivened by the young river, that is seen sparkling and shimmering as it sways from side to side, tracing as best it can its broad glacial channel.

The ancient Tuolumne Glacier, lavishly flooded by many a noble affluent from the snow-laden flanks of Mounts Dana, Gibbs, Lyell, Maclure, and others nameless as yet, poured its majestic overflowing current, four or five miles wide, directly against the high outstanding mass of Mount Hoffman, which divided and deflected it right and left, just as a river is divided against an island that stands in the middle of its channel. Two distinct glaciers were thus formed, one of which flowed through the Big Tuolumne Cañon and Hetch-Hetchy Valley, while the other swept upward five hundred feet in a broad current across the divide between the basins of the Tuolumne and Merced into the Tenaya basin, and thence down through the Tenaya Cañion and Yosemite Valley.

The maplike distinctness and freshness of this glacial landscape cannot fail to excite the attention of every observer, no matter how little of its scientific significance he may at first recognize. These bald, glossy, westward-leaning rocks in the open middle ground, with their rounded backs and shoulders toward the glacier fountains of the summit mountains and their split angular fronts looking in the opposite direction, every one of them displaying the form of greatest strength with reference to physical structure and glacial action, show the tremendous force with which through unnumbered centuries the ice flood swept over them, and also the direction of the flow; while the mountains, with their sharp summits and abraded sides, indicate the height to which the glacier rose: and the moraines, curving and swaying in beautiful lines, mark the boundaries of the main trunk and its tributaries as they existed toward the close of the glacial winter. None of the commercial highways of the sea or land, marked with buoys and lamps, fences and guideboards, is so unmistakably indicated as are these channels of the vanished Tuolumne glaciers.

The action of flowing ice, whether in the form of river-like glaciers or broad mantling folds, is but little understood as compared with that of other sculptur-
agents. Rivers work openly where people dwell, and so do the rain, and the sea thundering on all the shores of the world; and the universal ocean of air, though unseen, speaks aloud in a thousand voices and explains its modes of working and its power. But glaciers back in their cold solitudes work apart from men, exerting their tremendous energies in silence and darkness. Coming in vapor from the sea, flying invisible on the wind, descending in snow, changing to ice, white, spirit-like, they brood outspread over the predestined landscapes, working on unwearied through unmeasured ages, until in the fullness of time the mountains and valleys are brought forth, channels furrowed for the rivers, basins made for meadows and lakes, and soil beds spread for the forests and fields that man and beast may be fed. Then vanishing like clouds, they melt into streams and go singing back home to the sea.

To an observer upon this adamantine old monument in the midst of such scenery, getting glimpses of the thoughts of God, the day seems endless, the sun stands still. Much faithless fuss is made over the passage in the Bible telling of the standing still of the sun for Joshua. Here you may learn that the miracle occurs for every devout mountaineer,—for everybody doing anything worth doing, seeing anything worth seeing. One day is as a thousand years, a thousand years as one day, and while yet in the flesh you enjoy immortality.

From the monument you will find an easy way down through the woods and along the Big Tuolumnne Meadows to Mount Dana, the summit of which commands a grand telling view of the alpine region. The scenery all the way is inspiring, and you saunter on without knowing that you are climbing. The spacious sunny meadows, through the midst of which the bright river glides, extend with but little interruption ten miles to the eastward, dark woods rising on either side to the limit of tree growth, and above the woods a picturesque line of gray peaks and spires dotted with snow banks; while, on the axis of the Sierra, Mount Dana and his noble companions repose in massive sublimity, their vast size and simple flowing contours contrasting in the most striking manner with the clustering spires and thin-pin-nacled crests crisply outlined on the horizon to the north and south of them.

Tracing the silky lawns, gradually ascending, gazing at the sublime scenery more and more openly unfolded, noting the avalanche gaps in the upper forests, lingering over beds of blue gentians and purple-flowered bryanthus and casiope, and dwarf willows an inch high in close felted gray carpets, brightened here and there with kalmia and soft creeping mats of vaccinium, sprinkled with pink bells that seem to have been showered down from the sky like hail,—thus beguiled and enchanted, you reach the base of the mountain wholly unconscious of the miles you have walked. And so on to the summit. For all the way up the long red slate slopes that in the distance seemed baneful you find little garden beds, and tufts of dwarf phlox, ivesia, and blue arctic daisies that go straight to your heart, blessed fellow mountaineers kept safe and warm by a thousand miracles.

Yon are now more than thirteen thousand feet above the sea, and to the north and south you behold a sublime wilderness of mountains in glorious array, their snowy summits towering together in crowded bewildering abundance, shoulder to shoulder, peak beyond peak. To the east lies the Great Basin, barren looking and silent, apparently a land of pure desolation, rich only in beautiful light. Mono Lake, fourteen miles long, is outspread below you at a depth of nearly seven thousand feet, its shores of volcanic ashes and sand, treeless and sunburned; a group of volcanic cones, with well-formed, unwasted craters, rises to the south of the lake; while up from
its eastern shore innumerable mountains with soft flowing outlines extend range beyond range, gray and pale purple and blue,—the farthest gradually fading on the glowing horizon. Westward you look down and over the countless moraines, glacier meadows, and grand sea of domes and rock waves of the upper Tuolumne basin, the Cathedral and Hoffman mountains with their wavering lines and zones of forest, the wonderful region to the north of the Tuolumne Cañon, and across the dark belt of silver firs to the pale mountains of the coast.

In the icy fountains of the Mount Lyell and Ritter groups of peaks, to the south of Dana, three of the most important of the Sierra rivers—the Tuolumne, Merced, and San Joaquin—take their rise, their highest tributaries being within a few miles of one another, as they rush forth on their adventurous courses from beneath snow banks and glaciers.

Of the small shrinking glaciers of the Sierra, remnants of the majestic system that sculptured the range, I have seen sixty-five. About twenty-five of them are in the park, and eight are in sight from Mount Dana.

The glacier lakes are sprinkled over all the alpine and subalpine regions, gleaming like eyes beneath heavy rock brows, tree-fringed or bare, embosomed in the woods, and lying in open basins with green and purple meadows around them; but the greater number are in the cool shadowy hollows of the summit mountains not far from the glaciers, the highest lying at an elevation of from eleven to nearly twelve thousand feet above the sea. The whole number in the Sierra, not counting the smallest, can hardly be less than fifteen hundred, of which about two hundred and fifty are in the park. From one standpoint, on Red Mountain, I counted forty-two, most of them within a radius of ten miles. The glacier meadows, which are spread over the filled-up basins of vanished lakes, and form one of the most charming features of the scenery, are still more numerous than the lakes.

An observer stationed here, in the glacial period, would have overlooked a wrinkled mantle of ice as continuous as that which now covers the continent of Greenland; and of all the vast landscape now shining in the sun, he would have seen only the tops of the summit peaks, rising darkly like storm-beaten islands, lifeless and hopeless, above rock-encumbered ice waves. If among the agents that nature has employed in making these mountains there be one that above all others deserves the name of Destroyer, it is the glacier. But we quickly learn that destruction is creation. During the dreary centuries through which the Sierra lay in darkness, crushed beneath the ice folds of the glacial winter, there was a steady invincible advance toward the warm life and beauty of to-day; and it is just where the glaciers crushed most destructively that the greatest amount of beauty is made manifest. But as these landscapes have succeeded the preglacial landscapes, so they in turn are giving place to others already planned and foreseen. The granite domes and pavements, apparently imperishable, we take as symbols of permanence, while these crumbling peaks, down whose frosty gullies avalanches are ever falling, are symbols of change and decay. Yet all alike, fast or slow, are surely vanishing away.

Nature is ever at work building and pulling down, creating and destroying, keeping everything whirling and flowing, allowing no rest but in rhythmical motion, chasing everything in endless song out of one beautiful form into another.

John Muir.