

GEOGRAPHY

Surveying Yosemite Valley

"A Classic of Science"

From a Rare and Delightful Book of Exploration in the Old West by the First Head of the U. S. Geological Survey

MOUNTAINEERING IN THE SIERRA NEVADA. By Clarence King. Boston: James R. Osgood and Company, 1872.

BY AN ACT of Congress the Yosemite Valley had been segregated from the public domain, and given—"donated", as they call it—to the State of California, to be held inalienable for all time as a public pleasure-ground. The Commission into whose hands this trust devolved, had sent Mr. Gardner and myself to make a survey defining the boundaries of the new grant. It was necessary to execute this work before the Legislature should meet in December, and we undertook the work, knowing very well that we must use the utmost haste in order to escape a three months' imprisonment,—for in early winter the immense Sierra snowfalls would close the doors of mountain trails, and we should be unable to reach the lowlands until the following spring.

The party consisted of my companion, Mr. Gardner; Mr. Frederick A. Clark, who had been detailed from the service of the Mariposa Company to assist us; Longhurst, an *habitué* of the valley,—a weather-beaten round-the-worlder, whose function in the party was to tell yarns, sing songs, and feed the inner man; Cotter and Wilmer, chainmen; and two mules,—one who was blind and the other who, I aver, would have discharged his duty very much better without eyes.

We had chosen, as the headquarters of the survey, two little cabins under the pine trees near Black's Hotel. They were central; they offered us a shelter; and from their doors, which opened almost upon the Merced itself, we obtained a most delightful sunrise view of the Yosemite.

Next morning, in spite of early outcries from Longhurst, and a warning solo of his performed with spoon and fry-pan, we lay in our comfortable blankets pretending to enjoy the effect of sunrise light upon the Yosemite cliff

and fall, all of us unwilling to own that we were tired out and needed rest. Breakfast had waited an hour or more when we got a little weary of beds and yielded to the temptation of appetite.

A family of Indians, consisting of two huge girls and their parents, sat silently waiting for us to commence, and, after we had begun, watched every mouthful from the moment we got it successfully impaled upon the camp forks, a cloud darkening their faces as it disappeared forever down our throats.

Accomplished Camp Cook

But we quite lost our spectators when Longhurst came upon the boards as a flapjack-frier,—a *role* to which he bent his whole intelligence, and with entire success. Scorning such vulgar accomplishment as turning the cake over in mid-air, he slung it boldly up, turning it three times,—ostentatiously greasing the pan with a fine centrifugal movement, and catching the flapjack as it fluttered down,—and spanked it upon the hot coals with a touch at once graceful and masterly.

I failed to enjoy these products, feeling as if I were breakfasting in sacrilege upon works of art. Not so our Indian friends, who wrestled affectionately for frequent unfortunate cakes which would dodge Longhurst and fall into the ashes.

By night we had climbed to the top of the northern wall, camping at the head-waters of a small brook, named by emotional Mr. Hutchings, I believe, the Virgin's Tears, because from time to time from under the brow of a cliff just south of El Capitan there may be seen a feeble waterfall. I suspect this sentimental pleasantry is intended to bear some relation to the Bridal Veil Fall opposite. If it has any such force at all, it is a melancholy one, given by unusual gauntness and an aged aspect, and by the few evanescent tears which this old virgin sheds.

A charming camp-ground was formed by bands of russet meadow wander-

ing in vistas through a stately forest of dark green fir-trees unusually feathered to the base. Little mahogany-colored pools surrounded with sphagnum lay in the meadows, offering pleasant contrast of color. Our camp-ground was among clumps of thick firs, which completely walled in the fire, and made close overhanging shelters for table and beds.

Gardner, Cotter and I felt thankful to our thermometer for owning up frankly the chill of the next morning, as we left a generous camp-fire and marched off through fir forest and among brown meadows and bare ridges of rock toward El Capitan. This grandest of granite precipices is capped by a sort of forehead of stone sweeping down to level, severe brows, which jut out a few feet over the edge. A few weather-beaten, battle-twisted, and black pines cling in clefts, contrasting in force with the solid white stone.

We hung our barometer upon a stunted tree quite near the brink, and, climbing cautiously down, stretched ourselves out upon an overhanging block of granite, and looked over into the Yosemite Valley.

The rock fell under us in one sheer sweep thirty-two hundred feet; upon its face we could trace the lines of fracture and all prominent lithological changes. Directly beneath, outspread like a delicately tinted chart, lay the lovely park of Yosemite, winding in and out about the solid white feet of precipices which sunk into it on either side; its sunlit surface invaded by the shadow of the south wall; its spires of pine, open expanses of buff and drab meadow, and families of umber oaks rising as back-

He Stampeded The British Association

when he announced a
rational explanation of
the origin of whirling
storms.

JAMES P. ESPY

tells his Philosophy of Storms in
THE NEXT CLASSIC OF SCIENCE

ground for the vivid green of river-margin and flaming orange masses of frosted cottonwood foliage.

Deep in front the Bridal Veil brook made its way through the bottom of an open gorge and plunged off the edge of a thousand-foot cliff, falling in white water-dust and drifting in pale translucent clouds out over the tree-tops of the valley.

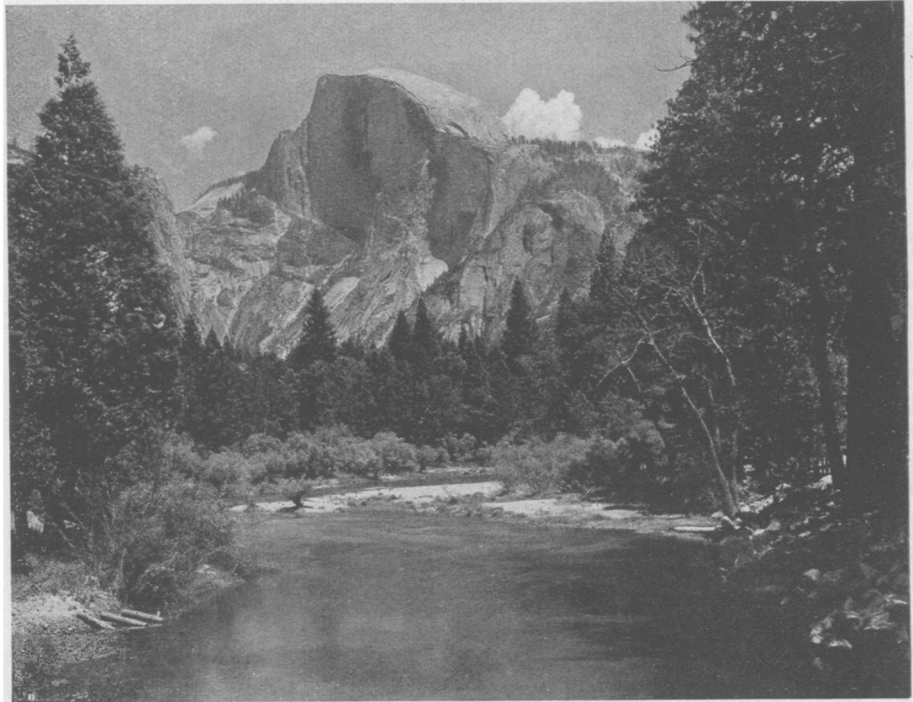
Directly opposite us, and forming the other gate-post of the valley's entrance, rose the great mass of Cathedral Rocks,—a group quite suggestive of the Florence Duomo.

But our grandest view was eastward, above the deep sheltered valley and over the tops of those terrible granite walls, out upon rolling ridges of stone and wonderful granite domes. Nothing in the whole list of irruptive products, except volcanoes themselves, is so wonderful as these domed mountains. They are of every variety of conoidal form, having horizontal sections accurately elliptical, ovoid, or circular, and profiles varying from such semicircles as the cap behind the Sentinel to the graceful infinite curves of the North Dome. Above and beyond these stretch back long ridges connecting with sunny summit peaks. The whole region is one solid granite mass, with here and there shallow soil layers, and a thin variable forest which grows in picturesque mode, defining the leading lines of erosion as an artist deepens here and there a line to hint at some structural peculiarity.

Perfection of Nature

A complete physical exposure of the range, from summit to base, lay before us. At one extreme stand sharpened peaks, white in fretwork of glistening ice-bank, or black where tower straight bolts of snowless fock; at the other stretch away plains smiling with a broad honest brown under autumn sunlight. They are not quite lovable even in distant tranquillity of hue, and just escape being interesting in spite of their familiar rivers and associated belts of oaks. Nothing can ever render them quite charming, for in the startling splendor of flower-clad April you are surfeited with an embarrassment of beauty, at all other times stunned by their poverty. Not so the summits; forever new, full of individuality, rich in detail, and coloring themselves anew under every cloud change or hue of heaven, they lay you under their spell.

From them the eye comes back over granite waves and domes to the sharp precipice-edges overhanging Yosemite. We look down those vast, hard, granite



THE HALF DOME

"Nothing in the whole list of irruptive products, except volcanoes themselves, is so wonderful as these domed mountains."

fronts, cracked and splintered, scarred and stained, down over gorges crammed with *debris*, or dark with files of climbing pines. Lower the precipice-feet are wrapped in meadow and grove, and beyond, level and sunlit, lies the floor,—that smooth river-cut park, with exquisite perfection of finish.

The dome-like cap of the Capitan is formed of concentric layers like the peels of an onion, each one about two or three feet thick. Upon the precipice itself, either from our station on an overhanging crevice, or from any point of opposite cliff or valley bottom, this structure is seen to be superficial, never descending more than a hundred feet.

In returning to camp we followed a main ridge, smooth and white under foot, but shaded by groves of alpine firs. Trees which here reach mature stature, and in apparent health, stand rooted in white gravel, resulting from surface decomposition. I am sure their foliage is darker than can be accounted for by effect of white contrasting earth. Wherever, in deep depressions, enough wash soil and vegetable mould have accumulated, there the trees gather in thicker groups, lift themselves higher, spread cut more and finer feathered branches; sometimes, however, richness of soil and perfection of condition prove fatal through overcrowding. They are wonderfully like human communities. One

may trace in a hour's walk nearly all the laws which govern the physical life of men.

Upon reaching camp we found Longhurst in a deep religious calm, happy in his mind, happy, too, in the posture of his body, which was reclining at ease upon a comfortable blanket-pile before the fire; a verse of the hymn "Coronation" escaped murmuringly from his lips, rising at times in shaky crescendos, accompanied by a waving and desultory movement of the forefinger. He had found among our medicines a black bottle of brandy, contrived to induce a mule to break it, and, just to save as much as possible while it was leaking, drank with freedom. Anticipating any possible displeasure of ours, Longhurst had collected his wits and arrived at a most excellent dinner, crowning the repast with a duff, accurately globular, neatly brecciated with abundant raisins, and drowned with a foaming sauce, to which the last of the brandy imparted an almost pathetic flavor.

The evening closed with moral remark and spiritual song from Longhurst, and the morning introduced us to our prosaic labor of running the boundary line,—a task which consumed several weeks, and occupied nearly all of our days.