JOHN MUIR: GEOLOGIST, EXPLORER, NATURALIST

And Nature, the old nurse, took
The child upon her knee,
Saying: "Here is a story-book
Thy Father has written for thee."

"Come wander with me," she said,
Into regions yet untrod;
And read what is still unread
In the manuscripts of God."

And he wandered away and away
With Nature, the dear old nurse,
Who sang to him night and day
The rhymes of the universe.

And whenever the way seemed long,
Or his heart began to fail,
She would sing a more wonderful song,
Or tell a more marvelous tale.

THE words so long ago applied by Longfellow to the elder Agassiz, have an equal descriptive power when attached to the lonely student of the American glaciers. They are, perhaps, even truer of the Scotch-American, than of the Swiss, since the latter, although a pioneer in his chosen path of scientific progress, lived in direct and constant intercourse with a large body of co-workers and students, in an atmosphere of high culture; while the former, more than once, has vanished for years together, into the wilderness, reappearing on the margins of society, coming into sight upon farms, in mills and in factories, only when his wants have compelled him. The result of these lonely labors has been twofold for the country and for the world: first, the acquisition of extensive knowledge regarding the effects of the glacial period; second, the establishment, through the influence of his writings, of national reservations and parks, in which our American flora and fauna may pursue their lives unmolested. Either side of the result would have been a life-work, the parallel of which is accomplished by a handful of persons in a whole generation; while the union of the two distinct divisions of the attainment assures for Mr. Muir the recognition of scientists, together with the warmer gratitude of the people to whose instruction and pleasure he has so richly contributed. His work demanding the most intelligent and trained powers of observation, coupled with heroic courage, patience and self-abnegation, has been done with a quietness and modesty all unconscious of requirement, exaction, or hardship, and with an enthusiasm which claims no exterior reward.

The writings of this faithful, passionate lover of Nature have a quality of interest and charm almost beyond description. His words, until they are examined critically, pass unnoticed, since they are a transparent medium for the transmission of thought. The ideas, in

the first force of conception, seize the reader, who is swept onward, as through a constantly changing panorama of real scenery and amid the most varied and emphatic forms of animal life.

But enchanting as these writings are, their chief value lies in the fact that they offer a record of observation and experiment; that they are a solid contribution to scientific literature whose accuracy can not be assailed. The work of Mr. Muir stands much above his words, and it will be accepted as his most valid claim to the lasting gratitude of the world. This is as he would wish it to be, since his attitude toward the more passive forms of intellectual labor was well defined in his refusal to prepare himself for teaching his science: replying repeatedly to the alluring inducements offered him, by saying simply that he wanted to be more than a professor, whether noticed by the world or not; that there were already too many instructors as compared with the students in the field. With the same restraint he has confined his public utterances to two volumes and perhaps one hundred fifty comparatively short articles, the latter of which he has contributed through a period of three decades to the current literature of the country; the first one appearing in the New York Tribune during the year 1871, while his first book, "The Mountains of California," was delayed until 1894. Of this a competent critic wrote that "it should take high rank among the productions of American naturalists by reason of the information which it contains, and yet it reads like a romance." It were better to say that this book, like all other writings of its author, "reads itself"; that it quickens the pulse and enlivens the imagination of the one who follows its story, not with the fevered heat generated by fiction, but with a glow of mental enthusiasm akin to the physical sensation produced by the ascent into rarified air.

The work and the writings of the man constitute his best portrait and biography. The bare facts of life—birth, early education and preliminary effort—are, in this case, as in all distinguished careers, of small importance, except as they are plainly the cause of success, and as such interesting and instructive. Otherwise, if recorded, they form a kind of literary gossip which it is unjustifiable, or at least idle to propagate.

In the personal history of John Muir there occur a number of these effect-producing facts from which have flowed the streams of

his activity. Such, for instance, were his Scotch birth and the severe training in several languages which, begun in early childhood, in the Mother Country, gave him the industry and the persistence with which to pursue his lonely studies in the forests of the New World. The acquisition needed the opportunity to be developed, which came in the disguise of a hardship and of parental restraint of long duration; since, at the age of eleven, taken by his family to Wisconsin, at a period (1849), when life in that State could not be other than that of pioneers and colonists, he struggled against the forces of Nature for bare existence, under circumstances familiar to all readers of the romantic, legendary history of the West, which never fails to recall the Labors of Hercules: that cycle of fables which epitomizes the story of civilization in the adventures of a hero and demi-god.

The life of the boy and youth, John Muir—for these conditions prevailed for eleven years—was made difficult to the limit of endurance by the refusal of his father to allow him any but very early morning hours in which to pursue his studies. He thus records experiences from which those conscious of power may draw courage and inspiration for the death-combat against adversity.

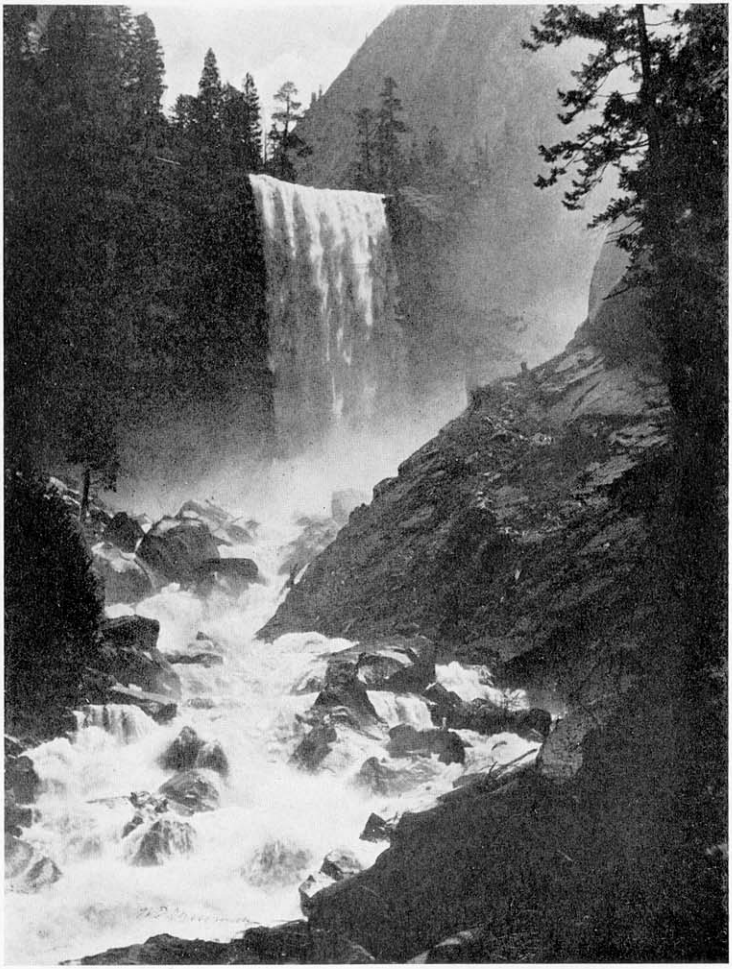
"It was winter," he writes, "and a boy sleeps soundly after chopping and fence-building all day in frosty air and snow. Therefore, I feared that I should not be able to take any advantage of the granted permission. For I was always asleep at six o'clock, when my father called. The early-rising machine was not then made, and there was no one to awaken me. Going to bed wondering whether I could compel myself to awaken before the regular hours, and determined to try, I was delighted, next morning, to find myself called by will, the power of which over sleep I then discovered. Throwing myself out of bed and lighting a candle, eager to learn how much time had been gained, I found that it was only one o'clock; leaving five hours before the work of the farm began. At this same hour, all winter long, my will, like a good angel, awakened me, and never did time seem more gloriously precious and rich. Fire was not allowed; so, to escape the frost, I went down into the cellar, and there read some favorite book—the Bible, 'Pilgrim's Progress,' Shakspere, Plutarch's Lives, Milton, Burns, Walter Scott—or I worked out some invention that haunted me."

Thus closely set round with the hardest physical limitations, the

boy was furthermore open to the censure of his parent. Deeply interested in Scott, as was inevitable in one of his traditions, temperament and talents, he was constantly confronted by the fact that "Feyther did na believe in a laddie's readin' novels." And again, having carved from wood the most ingenious clocks fitted with automatic attachments for lighting the lamps and fires, he was reprimanded sharply for wasting his time upon "sic-like fol-der-rols"; while he feared even that "Feyther might deem it his duty to burn them."

Thus up to the age when the ordinary boy is about to leave college, this youth of the wilderness worked in solitude: missing the companionship which forms and polishes the man of the world; which fits the individual to fence, to thrust and parry with such invisible arms as are necessary to success in professional, social, and business life. But compensation for this loss was not wanting. The lonely boy escaped the routine which a hard and fast system always entails. He studied things in and for themselves, and was carried from attainment to attainment by pure enthusiasm for his subjects. He was hampered by no set tasks and feared no examinations. Through stress of circumstances, he gained the best, the only, preparation for a career of individual and most difficult scientific investigation in which self-reliance and judgment, as well as knowledge, were among the principal factors of success. At the age of twenty-two, as a consequence of a visit to the State Fair at Madison, undertaken in order to sell specimens of his wooden clocks and other devices, he entered the University in that town; choosing to devote himself to mathematics, geology, chemistry and botany, and casting aside from the beginning all expectations of a diploma. This action which, to-day, would have no special significance, was, in 1860, a proof of strong individuality and practical sense; since a single curriculum leading to a single degree was prescribed to all students, and even Harvard, the pioneer in college progress, was yet far from offering elective courses.

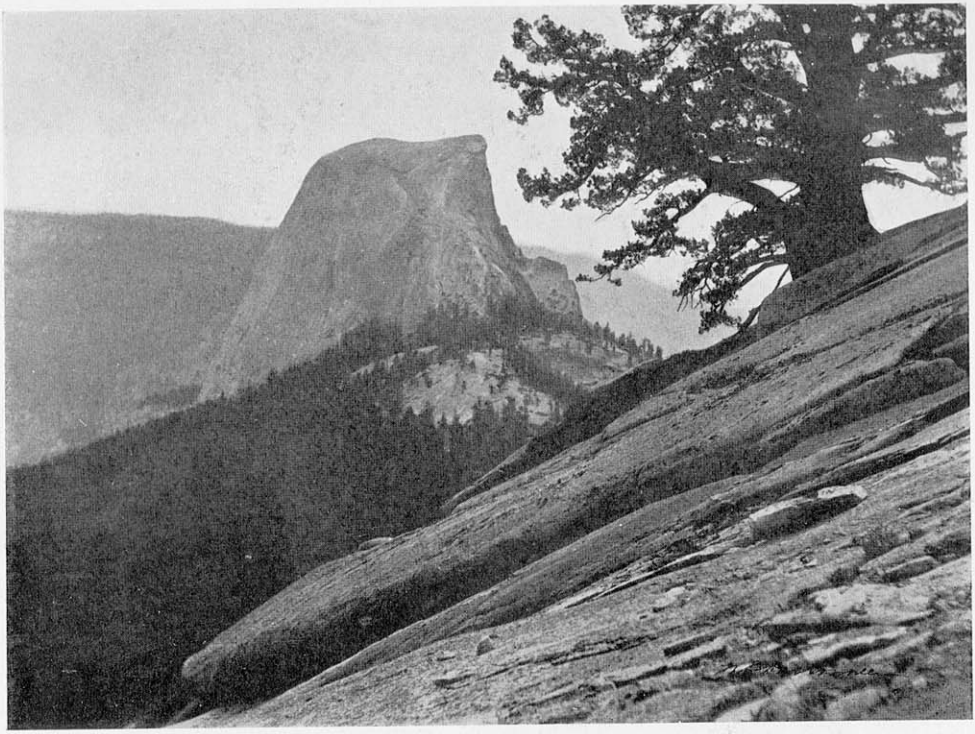
During Mr. Muir's studies at Madison there entered into his life the influence which is so often found working miracles in the early part of the careers of men destined to become famous: a guiding force, gentle, judicious and strong, which can proceed only from the sympathy, experience and protecting instinct of an elder and cultured woman. Isolation, the rude contact or the indifference of the world, poverty and hardship can often be forgotten, if only this influence be



VERNAL FALLS

"It is April. The falls respond gloriously to the ripe sunshine of these days. So do the flowers. I have written a song but dare not tell anyone as yet. I never can keep my pen perfectly sober when it gets into the bounce and hurrah of these falls, but it never has broken into rhyme before." *John Muir.*

Photograph by W. E. Dassonville, San Francisco



THE HALF DOME FROM CLOUD'S REST TRAIL

"The granite domes and pavement, 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.*

Photograph by W. E. Dassonville, San Francisco

present to sustain, as we recognize it to have been during the formative period of the man and scientist with whom we are dealing. The wife of a professor at the University of Wisconsin encouraged and inspired the struggling student; urging him to experiment, investigate, explore, until he developed into his strong maturity. Then, according to the law of such cases, ceasing to be the inspiring cause of action, she became the confidant, the one friend who lent the willing ear, the attentive mind to the story of project and success, of the discoverer's exultation and of the hero's daring. Therefore, while the honor which attaches to the self-made man, can not be taken away from Mr. Muir, the gift of his personality and accomplishments to the Nation and the world is jointly due to himself, as the active, and the kindly enlightened woman, as the passive agent; each force being absolutely necessary to the other.

A vista into a long period of doubt and probation is opened by a letter written by Mr. Muir at the age of twenty-seven. From this a quotation will be effective, since it offers a contrast with the quiet, assured current of thought running joyously through the writings of the same man after the attainment of signal success. While yet the chief path of his life lay unmarked before him, he expressed himself:

"A life-time is so little a time that we die before we get ready to live. I should like to study at a college, but then I have to say to myself: 'You will die before you can do anything else.' I should like to study medicine that I might do my part in lessening human misery; but again it comes: 'You will die before you are ready, or able to do so.' How intensely I desire to be a Humboldt! But again the chilling answer is reiterated: 'Could we live a million of years, then how delightful to spend in perfect contentment so many thousand years in quiet study in college, so many amid the grateful din of machines, so many amid human pain, so many thousands in the sweet study of Nature, among the dingles and dells of Scotland, and all the other less important parts of our world.' Then, perhaps, we might, with at least a show of reason, 'shuffle off this mortal coil,' and look back upon our star with something of satisfaction . . . . In our higher state of existence, we shall have time and intellect for study. Eternity, with perhaps the whole unlimited creation of God as our field, should satisfy us, and make us patient and trustful; while we pray with the Psalmist: 'Teach us to number our days that we may apply our hearts unto

wisdom'. . . .What you say respecting the littleness of the number who are called to the pure and deep commission of the beautiful all-loving Nature is particularly true of the hard-working people with whom I now dwell. In vain is the glorious chart of God in Nature spread out for them. 'So many acres chopped' is their motto. And they grub away amid the smoke of magnificent forest trees, black as demons and material as the soil they move upon. . . .In my long rambles, last summer, I did not find a single person who knew anything of botany, and but few who knew the meaning of the word; and wherein lay the charm which could conduct a man who might as well be gathering mammon, so many miles through these fastnesses to suffer hunger and exhaustion, was with them never to be discovered."

This melancholy view of life held by the young man was, a year later, changed to poignant grief by an accident whose results threatened the loss of his right eye. Then, yielding to his strongest impluse—the love of Nature—he subordinated to it the necessity of earning his bread. His sight seemed chiefly dear and valuable to him because it permitted him to enjoy the beauty of the external world, and his sorrow condensed into the single cry: "The sunshine and winds are working in all the gardens of God, but I, I am lost. I am shut in darkness."

But again, as in the case of his early hardships and solitude, the accident and a subsequent malarial fever were but the workings of destiny which slowly drew him to the place of his real labors. Scarcely recovered from his accident, he undertook a thousand mile tramp to Florida, sleeping for the most part in the open, from preference, as well as for reasons of economy. Weary, fasting and foot-sore, he never lost enthusiasm, and at the end of a fatiguing stage of his journey he wrote: "I have walked from Louisville, a distance of one hundred seventy miles; but, oh, I am repaid for all my toil, a thousand times over. . . . The sun has been among the tree tops for more than an hour, and the dew is nearly all taken back, and the shade in these hid basins is creeping away into the unbroken strongholds of the grand old forest. I have enjoyed the trees and scenery of Kentucky exceedingly. How shall I ever tell of the miles and miles of beauty that have been flowing into me? . . . .I am in the woods on a hill-top with my back against a moss-clad log. I wish that you could see my last evening's bedroom. . . .It was a few miles south of Louis-

ville where I planned my journey. I spread out my map under a tree, and made up my mind to go through Kentucky, Tennesee, and Georgia to Florida, thence to Cuba, and from that island to some part of South America. But it will only be a hasty walk. I am thankful, however, for so much."

In the failure of this project his last serious disappointment awaited him. Stricken with malarial fever, he lay prostrate for two months, after which he referred to himself as "creeping about, getting plants and strength": by this expression revealing, as usual, his love of Nature as his first impulse, and his realization of physical necessity as secondary. But he yet knew the value of health, and in the effort to regain it, he sailed for California, whence in the late summer following, he wrote that except for an occasional feeling of loneliness, the pleasure of his existence would be complete, and that he should remain upon the Pacific Coast for eight or nine months.

As he acknowledged, "Fate and flowers carried him to California," but the mountains held him until he read the story of the earth which lies sculptured in hieroglyphs upon their flanks. Making his entrance into the Golden State in his lesser qualities of naturalist and botanist, he described his first experiences and impressions with the ingenuousness of the old missionaries: setting aside all the severities of science and giving to his writing the savor of a wonder tale:

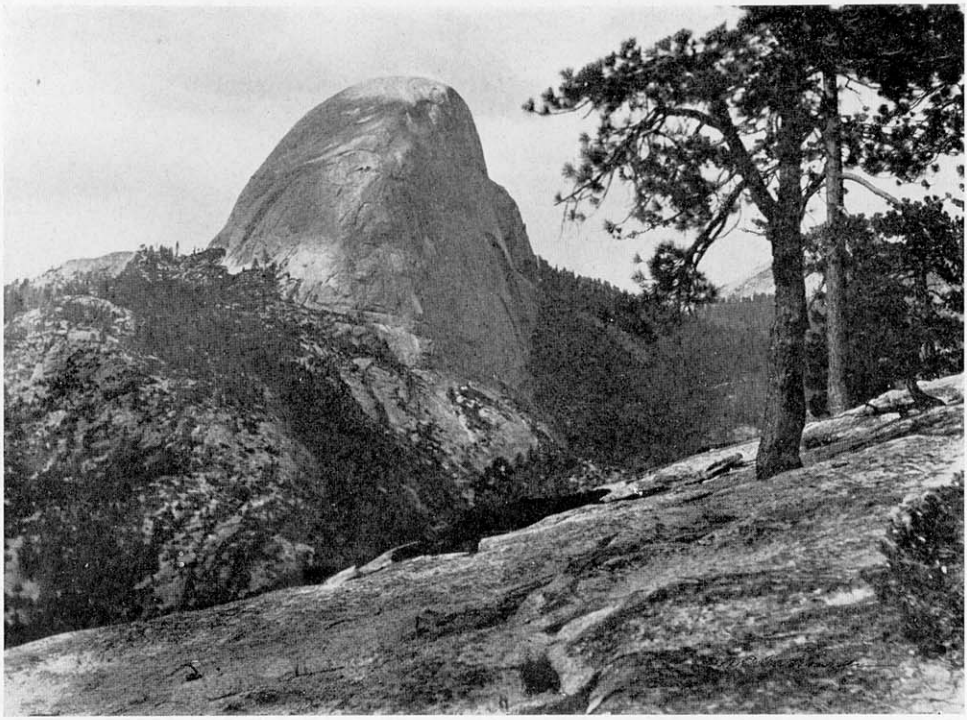
"Arriving in San Francisco in April, I struck at once into the country. I followed the Diabolo Foothills along the San José Valley to Gilroy: thence over the Diabolo Mountains to Valley of San Joaquin by the Pacheco Pass; thence down the valley opposite the mouth of the Merced river; thence across the San Joaquin, and up into the Sierra Nevada to the mammoth trees of Mariposa, and the glorious Yosemite; thence down the Merced to my present position in the county bearing the name of the river.

"The goodness of the weather as I journeyed toward Pacheco was beyond all praise and description: fragrant, mellow and bright, the sky was delicious—sweet enough for the breath of angels. Every draught of it gave a separate and distinct piece of pleasure. I do not believe that Adam and Eve ever tasted better in their balmiest nook. The last of the coast range foothills were in near view all the way to Gilroy. Their union with the Valley is by curves and slopes of inimitable beauty, and they were robed with the greenest grass and rich-

est light I ever beheld, and colored and shaded with myriads of flowers of every hue—chiefly of purple and golden yellow—and hundreds of crystal rills joined song with the larks; filling all the Valley with music like a sea, making it Eden from end to end.

"The scenery, too, and all of Nature in the Pass is fairly enchanting: strange and beautiful mountain ferns, low in the dark canyons, and high upon the rocky sunlit peaks; banks of blooming shrub; sprinklings and gatherings of garment flowers, precious and pure as ever enjoyed the sweets of a mountain home. Oh, what streams are there beaming, glancing, each with music of its own, singing as they go in shadow and light, onward upon their lovely changing pathways to the sea! And hills rise over hills, and mountains over mountains, heaving, waving, swelling, in most glorious, overpowering, unreadable majesty. At last, when stricken and faint, like a crushed insect, you hope to escape from all the terrible grandeur of these mountain powers, other fountains, other oceans break forth before you. For, there, in clear view, over heaps and rows of foothills is laid a grand, smooth, outspread plain, watered by a river, and another range of peaky, snow-capped mountains a hundred miles in the distance: that plain is the Valley of the San Joaquin, and those mountains are the Sierra Nevada. The Valley of the San Joaquin is the floweriest piece of world I ever walked: one vast, level, even flowerbed, a sheet of flowers, a smooth sea, ruffled a little in the middle by the tree fringing of the river, and here and there of cross streams from the mountains. Florida is a land of flowers; but for every flower creature that dwells in its most delightsome places, more than a hundred is living here. Here, here is Florida. Here they are not sprinkled apart with grass between as in our prairies, but grasses are sprinkled in the flowers; not as in Cuba, flowers piled upon flowers, heaped and gathered into deep glowing masses. But, side by side, flower to flower, petal to petal, touching but not entwined, branches weaving past and past each other, but free and separate: one smooth garment, mosses next the ground, grasses above, petaled flowers between.

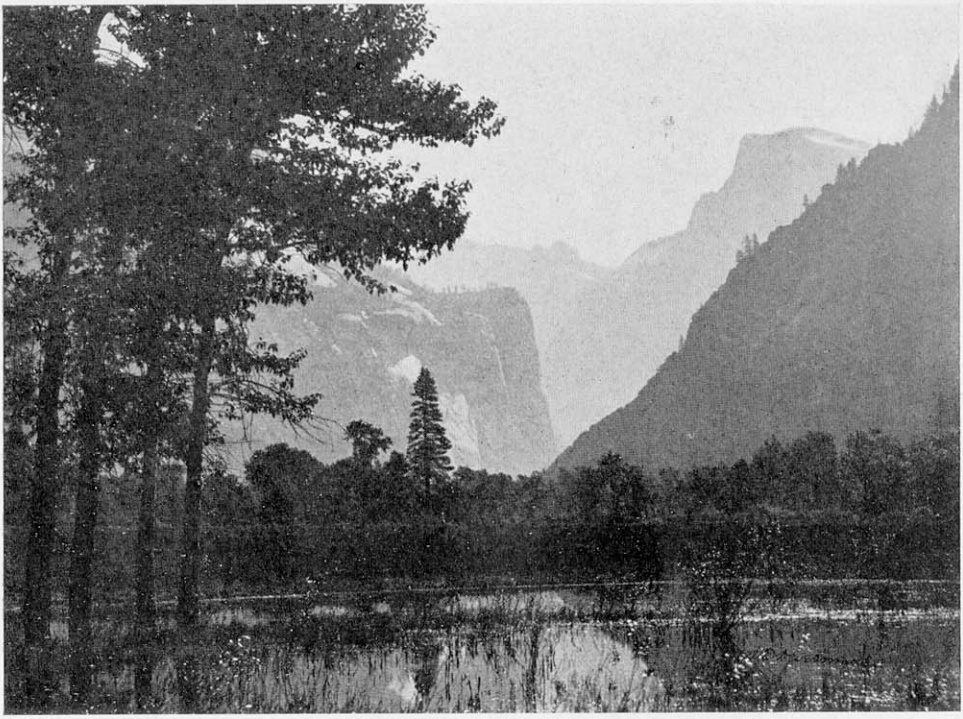
"Before studying the flowers of this valley, and their sky, and all their furniture and sounds and adornments of their home, one can scarce believe that their vast assemblies are permanent, but rather that, actuated by some great plant-purpose, they have convened from every plain and mountain, and meadow of their kingdom, and that the



HALF DOME FROM THE ILLILONETTE FALLS TRAIL

"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." *John Muir.*

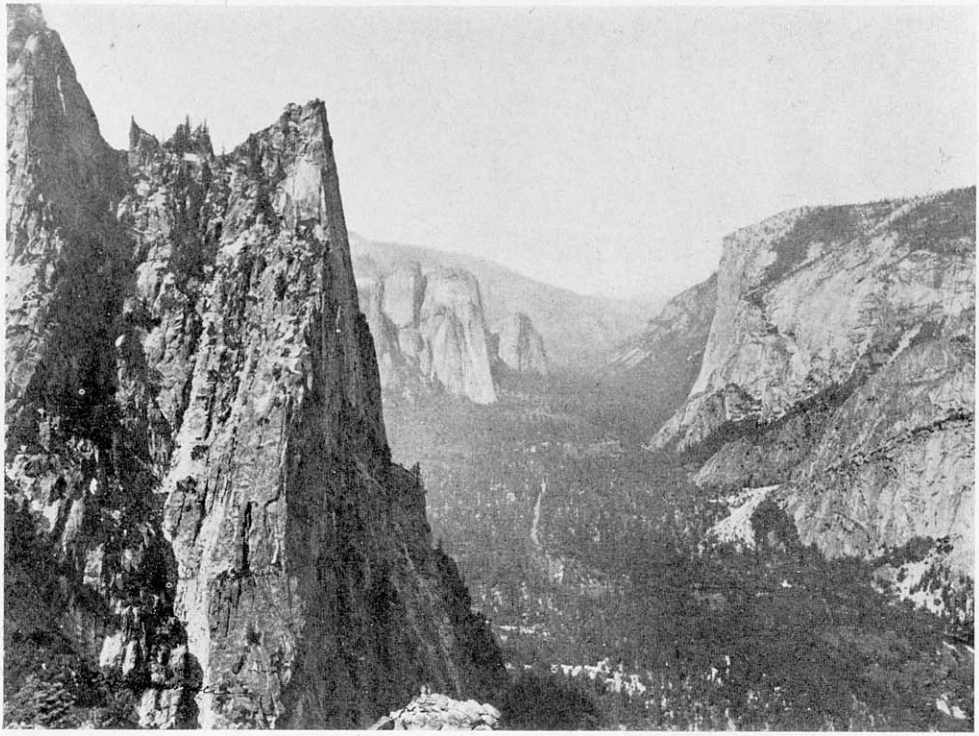
Photograph by W. E. Dassonville, San Francisco



YOSEMITE VALLEY IN THE EARLY MORNING

"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 the first lessons of life, mountain-building, eternal, invincible, unbreaking order; with sermons in stones, storms, trees, flowers, and animals brimful of humanity." *John Muir.*

Photograph by W. E. Dassonville, San Francisco

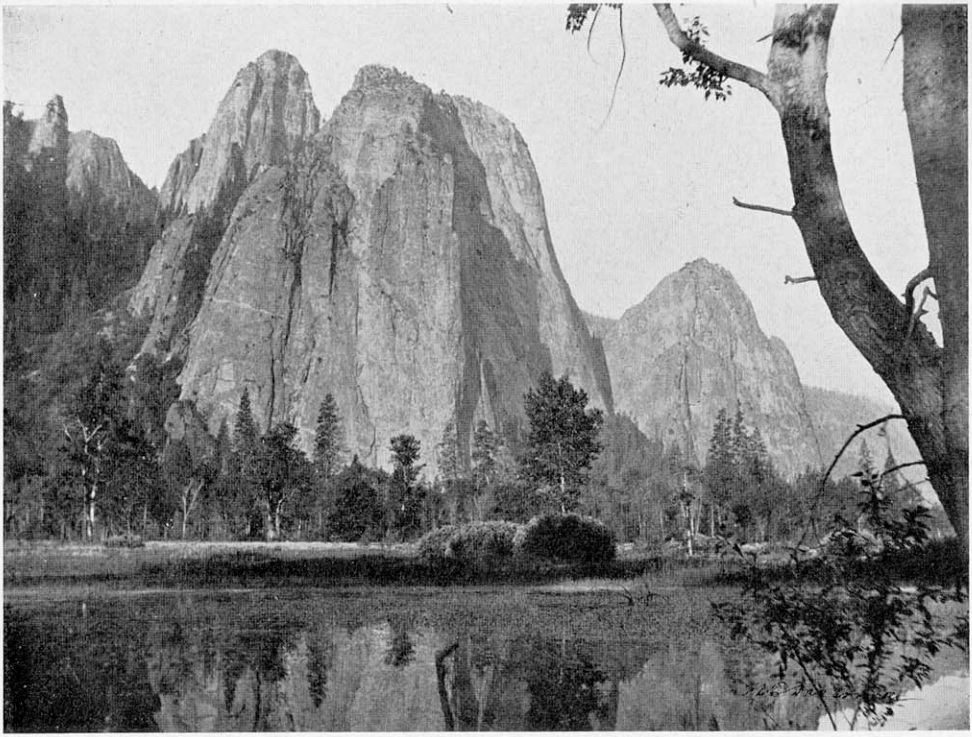


PROFILE CLIFF AND EL CAPITAN

"Not a peak, ridge, dome, canyon, lake basin, garden, forest, or stream but in some way explains the past existence and mode of action of flowing, grinding, sculpturing, soil-making, scenery-making ice. For, notwithstanding the post-glacial 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."

John Muir.

Photograph by W. E. Dassonville, San Francisco



CATHEDRAL PEAK

"Cathedral Peak with its many spires and companion peaks and domes is 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 fine 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." *John Muir.*

Photograph by W. E. Dassonville, San Francisco

different coloring of patches, acres and miles, marked the bounds of the various tribe and family encampments."

The quotation just given, is chosen from the riches of a born *raconteur*. The thought is clothed in words approaching quaintness, and the style flowing on easily, suggests what Wordsworth so happily named "a quiet tune." Equally fascinating to the unlearned is the description of the Yellowstone National Park, published in Volume 81 of the Atlantic Monthly, in which Mr. Muir relates with expert clearness, free from clogging technicalities, the story of the natural drama of the region: dividing it into the successive acts wherein fire or water, in the form of volcanoes or glaciers, played the principal part, and giving to his writing a force and grandeur suggestive of Victor Hugo; as, for example, in the sentences:

"Now the post-glacial agents are at work on the grand old palimpsest of the park, inscribing new characters; but still in its main, telling features it remains distinctly glacial. The moraine soils are being leveled, sorted, refined, and re-formed, and covered with vegetation; the polished pavements and scoring and other superficial glacial inscriptions on the crumbling lavas are being rapidly obliterated; gorges are being cut in the decomposed rhyolites and loose conglomerates, and turrets and pinnacles seem to be springing up like growing trees, while the geysers are depositing miles of sinter and travertine. Nevertheless, the ice-work is scarce blurred as yet. These later effects are only spots and wrinkles on the grand glacial countenance of the park."

Again in the succeeding volume of the Atlantic (Number 82), there appears the article in which, perhaps, Mr. Muir reaches the climax of his lighter style. In "Among the Animals of the Yosemite," he describes the Sierra bear as one of the happiest of beings: "all the year round his bread is sure, for some of the thousand kinds that he likes are always in season and accessible, ranged on the shelves of the mountains like stores in a pantry. . . .A sheep, or a wounded deer, or a pig, he eats warm, about as quickly as a boy swallows a buttered muffin. After so gross a meal as this, perhaps the next will be strawberries and clover. . . .And, as if fearing that anything eatable in all his dominions should escape being eaten, he breaks into cabins to look after sugar and bacon. Occasionally, too, he eats the mountaineer's bed."

Here, although greed is the quality put forward, the subject of the sketch, far from being rendered repellent, becomes amusing and even attractive, through the application of a few well-chosen words.

A contrast to this portrait is offered by the subtile description of the Douglas squirrel, which reflects the darting motion, the very being of the sprightly creature. Of the representative of this species Mr. Muir says: "He is the most influential of the Sierra animals, although small, and the brightest of all the squirrels I know—a squirrel of squirrels, quick mountain vigor and valor condensed, purely wild, and as free from disease as a sunbeam. One can not think of such an animal ever being weary or sick. His fine tail floats now behind, now above him, level or gracefully curled, light and radiant as dry thistledown. His body seems hardly more substantial than his tail. The Douglas is a firm, emphatic bolt of life, full of show and fight, and his movements have none of the elegant deliberation of the gray. They are so quick and keen they almost sting the onlooker, and the acrobatic harlequin-show he makes of himself turns one giddy to see. . . . .He goes his ways bold as a lion, up and down and across, round and round, the happiest, merriest of all the hairy tribe, and, at the same time, tremendously earnest and solemn, sunshine incarnate, making every tree tingle with his electric toes. If you prick him, you can not think he will bleed. He seems above the chance and change that beset common mortals, though in busily gathering burrs and nuts he shows us that he has to work for a living, like the rest of us. I never found a dead Douglas. He gets into the world and out of it without being noticed; only in prime is he seen, like some little plants that are visible only when in bloom."

We could wish, in the interest of the people that all species of our fauna and flora might be described by the pen of Mr. Muir, since he clothes the dry bones of fact in most attractive form, and, to use the phrase of Addison, succeeds in making "knowledge amiable and lovely to all." But yet had he written more voluminously, had he been content to remain a simple naturalist, we should not have benefited by his studies of the effects of the glacial period. These researches entailed a decade of isolation, and difficult journeys in the Sierras and Alaska, as well as participation in the Corwin Expedition organized in 1881, to search for the ill-fated exploring vessel Jeannette. By this means, Mr. Muir was enabled to extend his observa-

tions to the Behring Sea and along the coast of Siberia; while, twelve years later, in 1893, he visited Norway and Switzerland further to examine the intensely interesting natural phenomena to the study of which he had given the best years of his life. His belief in the existence of living glaciers in the Sierras was at first combated by scientists of higher academic training, who had made these mountains the subject of their study, and the public was illy disposed to accept the assertions of a "sheepherder" against what appeared to be the authoritative statements of scholars like Whitney, King, Le Comte and Hoffman. "Therefore," wrote Mr. Muir, "although I was myself satisfied regarding the nature of these ice masses, I found that my friends distrusted my deductions, and I determined to collect proofs of the common arithmetical measured kind."

These proofs Mr. Muir gathered alone, often with great peril to his life, but always in the certainty that the truth would triumph. He ended by demonstrating the Sierra glaciers to be living, as determined by their motion, which he found simple means to verify. The correctness of his arguments, the sure foundation of his belief were acknowledged by the scientists who had questioned and challenged the lay intruder into their circle; the oldest University in the country conferred upon him an honorary degree; while the Western institution, at which he had acquired a working knowledge of the sciences, bestowed upon him a similar mark of approval. A glacier in Alaska has been called after him, and his memory will go down in scientific history as that of a man of real attainments: one whose name is attached to a discovery, and consequently must live as long as the fact or the thing discovered shall prove of interest or of use. His life-work, by no means ended, or even slackened, has yet passed beyond the period of struggle into that of achievement, variety and well-ordered quiet. He continues to observe Nature and to record his observations, relieving his study by the practical cares incident to the ownership of one of the largest cherry orchards of the world. In this position his practical sense, his close study of growth, his love for everything living make him most successful; while his broad Scotch humor, exemplified in a response to a summons to a scientific expedition among the Sierras, reveals a new and pleasing aspect of his character unsuspected by those who know him only through the facts of his career as geologist and naturalist. The summons came at the annual

gathering season, and the owner of the orchard was found by the messenger, at his post among heavily-laden trees. A shade of mock despair passed over his face, and picking a cherry, he exclaimed in his native dialect: "Dinna ye see that, mon? That red-faced, bald-headed, sleek, one-legged wretch? I'm an absolute slave to that divvil. So, I can na go, I can na go."

From this example and from many others of the kind which might be adduced, it is plain that the life which we have now considered at some length runs the whole gamut of existence, each note sounding clear and full: the austere, the strenuous and the sorrowful up to the highest notes of pure and simple gayety.

It remains but to accentuate two points: first, his responsiveness to the inspiring source of his endeavor, as witnessed in a descriptive letter to the lady previously mentioned, and here printed for the first time; second, his heroism, which, in an instance related by a friend, shows him to be of the purest blood of Alpine climbers: one in whom cowardice and selfishness have been eliminated through the contemplation of Nature clothed in her divine majesty. Reading this story of courage and devotion, one hears rising in his mind the themes of Beethoven's Heroic Symphony, and certain words of Robert Browning recur also to the memory as a fitting epitaph to John Muir, when he shall have "passed over to the majority":

> "He did too many grandnesses to note
> Much of the meaner things along his way."

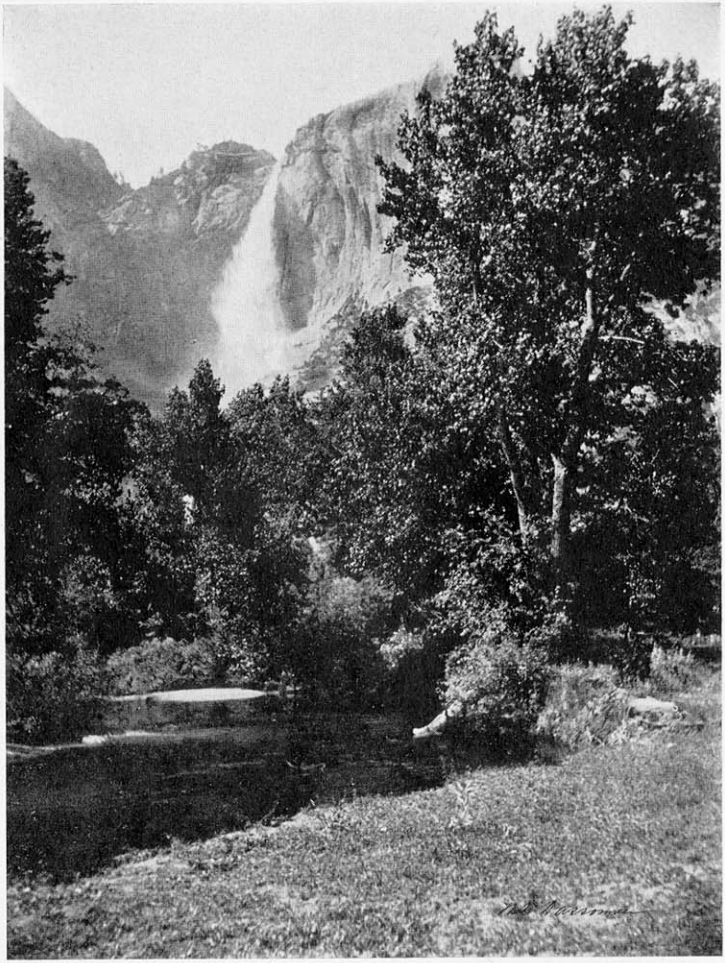
A LETTER FROM THE YOSEMITE VALLEY

HERE again (in the Yosemite Valley) are pine trees, and the wind, and living rock and water. I have met two of my ousels on one of the pebbly ripples of the river, where I used to be with them. Most of the meadow gardens are disenchanted and dead, yet I found a few mint spikes, and asters, and brave sunful golden-rod, and a patch of the tiny *minusculus* that has two spots on each lip. The fragrance, and the color, and the form, and the whole spiritual expression of golden-rod are hopeful and strength-giving beyond any other flower that I know. A single spike is sufficient to heal unbelief and melancholy.

THE THREE BROTHERS

"No wonder the Indians loved the Yosemite Valley. No wonder they named every salient dome and spire and lake and waterfall. No wonder they fought hard for its possession and wailed loud and long when strong and warlike foes dispossessed them. Pompompesus—the leaping frogs—which we call The Three Brothers, with the quietly flowing Merced at its feet, afforded the Indian rhapsodists a fine theme for one of their imaginative stories."

Photograph by W. E. Dassonville, San Francisco



YOSEMITE FALLS FROM THE MEADOW

"I have been wandering about among the falls and rapids studying the grand instruments of slopes and curves and echoing caves upon which those divine harmonies are played. Only a thin flossy veil sways and bends over Yosemite now and Pohono too is a web of waving mist. New songs are sung, forming parts of the one grand anthem composed and written 'in the beginning.'" *John Muir.*

Photograph by W. E. Dassonville, San Francisco

On leaving Oakland I was so excited over my escape that of course I forgot and left all the accounts I was to collect. No wonder and no matter. I am beneath the grand old pine that I have heard so often in storms, both in the night and in the day. It sings grandly now, every needle sun-thrilled, and shining, and responding tunefully to the azure wind.

When I left, I was in a dreaming, exhausted daze. Yet from mere habit or instinct I tried to observe and study. From the car window I watched the gradual transitions from muddy water, spongy tule, marsh, and level field, as we shot up the San José Valley, and marked, as best I could, the forms of the stream canyons as they opened to the plain, and the outlines of the undulating hillocks and headlands between. Interest increased at every mile, until it seemed unbearable to be thrust so flyingly onward, even toward the blessed Sierras. I shall study them yet, free from time and wheels. When we turned suddenly and dashed into the narrow mouth of the Livermore Pass, I was looking out of the right side of the car. The window was closed on account of the cinders and smoke from the locomotive. All at once, my eye seized a big hard rock not a hundred yards away, every line of which is as strictly and outspokenly glacial as any of the most alphabetic of the high and young Sierra. That one sure glacial word thrilled and overjoyed me more than you will ever believe. Town smokes and shadows had not dimmed my vision, for I had passed this glacial rock twice before, without reading its meaning.

As we proceeded, the general glacialness of the range became more and more apparent, until we reached Pleasanton, where once there was a great *mer de glace*. Here, the red sun went down in a cloudless glow, and I leaned back, happy and weary, and possessed of a life full of noble problems.

At Lathrop, we had supper and changed cars. The last of the daylight had long faded, and I sauntered away from the din, while the baggage was being transferred. The young moon hung like a sickle above the shorn wheatfields. Ursa Major pictured the Northern sky; the milky way curved sublimely through the broadcast stars, like some grand celestial moraine with planets for bowlders; and the whole night shone resplendent, adorned with that calm, imperishable beauty it has worn unchanged from the beginning.

I slept at Turlock, and, next morning, faced the Sierra, and set out through the sand on foot. The freedom I felt was exhilarating, and the burning heat, and thirst, and faintness could not make it less. Before I had walked ten miles, I was wearied and footsore, but it was real earnest work and I liked it. Any kind of simple, natural destruction is preferable to the numb, dumb apathetic deaths of a town.

Before I was out of sight of Turlock, I found a handful of glorious *hemizonia virgata* and a few specimens of the patient, steadfast *erigonum,* that I had learned to love around the slopes of Twenty-Hill Hollow. While I stood with these old dear friends, we were joined by a lark, and, in a few seconds more, Harry Edwards came flapping by with spotted wings. Just think of the completeness of that reunion: Twenty Hill Hollow *Hemizonia, Erigonum,* Lark, butterfly and I, and lavish outflows of genuine Twenty Hill Hollow sungold. I threw down my coat and one shirt in the sand; forgetting Hopeton, and heedless that the sun was becoming hotter every minute. I was wild once more, and let my watch warn and point as it pleased. Heavy wagon loads of wheat had been hauled along the road, and the wheels had sunken deeply and left smooth, beveled furrows in the sand. Upon the slopes of these sand furrows, I soon observed a most beautiful and varied embroidery: evidently tracks of some kind. At first, I thought of mice, but I soon saw they were too light and delicate even for the tracks of these little animals. Then, a tiny lizard darted into the stubble ahead of me, and I carefully examined the track he made, but it was entirely unlike the fine print-embroidery I was studying. However, I knew that he might make very different tracks, if walking leisurely; therefore I determined to catch one and experiment. I found in Florida that lizards, however swift, are short winded; so I gave chase and soon captured a tiny gray fellow, and carried him to a smooth sand-bed where he could embroider, without getting away into grass tufts or holes. He was so wearied that he could not skim, and was compelled to walk, and I was excited with delight in seeing an exquisitely beautiful strip of embroidery about five-eighths of an inch wide, drawn out in flowing curves behind him as from a loom. The riddle was solved. I knew that mountain bowlders move in music. So also do lizards, and their written music printed by their feet (moved so swiftly as to be invisible) covers the hot sands with beauty wherever they go. But

my sand embroidery-lesson was by no means finished. I speedily discovered a yet more delicate pattern on the sands, woven into that of the lizards. I examined the strange combination of bars and dots. No five-toed lizard had printed that music. I watched narrowly, down on my knees, following the strange and beautiful pattern along the wheel furrows, and out into the stubble. Occasionally, the pattern would suddenly end in a shallow pit half an inch across and an eighth of an inch deep. I was fairly puzzled, picked up my bundle and trudged discontentedly away; but my eyes were hungrily awake and I watched all the ground. At length, a gray grasshopper rattled and flew up, and the truth flashed upon me that he was the complementary embroiderer of the lizard. Then followed long, careful observation, but I never could see the grasshopper until he jumped, and after he alighted he invariably stood watching me with his legs set ready for another jump in case of danger. Nevertheless, I soon made sure that he was my man; for I found that, in jumping, he made the shallow pits I had observed at the termination of the pattern I was studying. But no matter how patiently I waited he wouldn't *walk,* while I was sufficiently near to observe—they are so nearly the color of the sand. I therefore caught one, and lifted his wing covers, and cut off about half of each wing with my penknife, and carried him to a favorable place on the sand. At first, he did nothing but jump and make dimples, but soon became weary and walked in common rhythm with all his six legs. My interest you may guess, while I watched the embroidery: the written music, laid down in a beautiful ribbonlike strip behind him. I glowed with wild joy, as if I had found a new glacier, copied specimens of the precious fabric into my note book, and strode away with my own feet sinking with a dull craunch, craunch, craunch, in the hot gray sand, glad to believe that the dark and cloudy vicissitudes of the Oakland period had not dimmed my vision in the least. Surely, Mother Nature pitied the poor boy and showed him pictures!

Happen what would, fever-thirst or sunstroke, my joy for that day was complete. Yet I was to receive still more. A train of curving tracks, with a line in the middle, next fixed my attention, and almost before I had time to make a guess concerning their author, a small hawk came shooting down vertically out of the sky, a few steps ahead of me, and picked up something in his talons. After rising thirty or forty feet overhead, he dropped it by the roadside, as if to show me

what it was. I ran forward and found a little bunchy field mouse, and, at once, suspected him of being embroiderer number three. After an exciting chase through stubble-heaps and weed-thickets, I wearied and captured him without being bitten, and turned him free to make his mark in a favorable sand bed. He also embroidered better than he knew, and at once claimed the authorship of the new trackwork.

I soon learned to distinguish the pretty sparrow-track from that of the magpie and the lark, with their three delicate branches and the straight scratch behind, made by the back curving claw dragged loosely like the spur of a Mexican *vacquero*. The cushioned, elastic feet of the hare frequently were seen mixed with the pattering, scratchy prints of the squirrels. I was now wholly trackful. I fancied I could see the air whirling in dimpled eddies from sparrow- and lark-wings, earthquake bowlders descending in a song of curves, snowflakes glinting songfully hither and thither. "The water in music the oar forsakes." The air in music the wing forsakes. All things move in music and write it. The mouse, lizard, and grasshopper sing together on the Turlock sands, sing with the morning stars.

Scarcely had I begun to catch the eternal harmonies of Nature, when I heard the hearty goddamning din of the mule driver; dust whirled into the sungold, and I could see the sweltering mules leaning forward, dragging the heavily piled wheat-wagons deep sunken in the sand. My embroidery perished by the mile, but the grasshoppers never wearied, nor the gray lizards, nor the larks, and the coarse confusion of man was speedily healed.

About noon, I found a family of grangers feeding, and remembering your admonition anent my health, requested leave to join them. My head ached with fever and sunshine, and I could not dare the ancient brown bacon, or the beans and cakes, but water and splendid buttermilk came in perfect affinity and made me strong. Toward evening, after passing through miles of blooming *hemizonia,* I reached Hopeton, on the edge of the oak fringe of the Merced. Here, all were yellow and woe-begone with malarial fever. I rested one day, spending the time in examining the remarkably flat, water-eroded Valley of the Merced, and the geological sections which it offers. In going across to the river, I had a suggestive time, breaking my way through tangles of blackberry and brier-rose, and willow. I admire

delicate plants that are well prickled, and, therefore, took my scratched face and hands patiently. I bathed in the sacred stream, seeming to catch all its mountain tones while it softly murmured and rippled over the shallows of brown pebbles. The whole river, back to its icy sources, seemed to rise in clear vision with its countless cascades, and falls, and blooming meadows, and gardens. Its pine groves, too, and the winds that play them, all appeared and sounded.

In the cool of the evening, I caught Browny and cantered across to the Tuolumne; the whole way being fragrant and golden with *hemizonia.* A breeze swept in from your Golden Gate regions over the passes, and across the plains, fanning the hot ground and drooping plants, and refreshing every beast and bird and weary plodding man. It was dark before I reached my old friend Delaney, but I was instantly recognized by my voice, and welcomed in the old, good, uncivilized way, not to be misunderstood.

All the region adjacent to the Tuolumne River, where it sweeps out into the plain, after its long eventful journey in the mountains, is exceedingly picturesque. Round terraced hills, brown and yellow with grasses and *compositae* and adorned with open groves of darkly foliaged live-oak, are grouped in a most open, tranquil manner, and laid upon a smooth, level base of purple plain; while the river bank is lined with nooks of great beauty and variety, in which the river has swept and curled, shifting from side to side, retreating and returning, as determined by floods, and the gradual erosion and removal of drift-beds formerly laid down. A few miles above here, at the village of La Grange, the wild river had made some astonishing deposits in its young days, through which it now flows with the manners of stately old age, apparently disclaiming all knowledge of them. But a thousand thousand bowlders, gathered from many a moraine, swashed and ground in pot-holes, record their history, and tell of white floods of a grandeur not easily conceived. Noble sections, nearly a hundred feet deep, are laid bare like a book, by the Mining Company. Water is drawn from the river, several miles above, and conducted by ditches and pipes, and made to play upon these deposits for the gold they contain. Thus the Tuolumne of to-day is compelled to unravel and lay bare its own ancient history, which is a thousandfold more important than the handfuls of gold sand it chances to contain.

I mean to return to these magnificent records in a week or two,

and turn the gold disease of the La Grangers to account, in learning the grand old story of the Sierra flood period. If these hundred laborious hydraulickers were in my employ, they could not do me better service, and, all along the Sierra flank, thousands of strong arms are working for me, incited by the small golden bait. Who shall say that I am not rich?

On I went up through the purple foothills to Coulterville, where I met many hearty, shaggy mountaineers, glad to see me. Strange to say, The Overland "Studies" have been read and discussed in the most unlikely places. Some numbers have found their way through the Bloody Canyon pass to Mono.

In the evening, Black and I rode together up into the sugar pine forests, and through the moonlight on to his old ranch. The grand, priest-like pines held their arms above us in blessing; the wind sang songs of welcome; the cool glaciers and the running crystal fountains added their greetings. I was no longer on, but in the mountains: home again, and my pulses were filled. On and on reveling in white moonlight spangles on the streams, shadows in rock hollows and briery ravines, tree architecture on the sky, more divine than ever stars in their spires, leafy mosaic on meadow and bank. Never had the Sierra seemed so inexhaustible. Mile on mile onward in the forest through groves old and young. Pine tassels overarched and brushed both cheeks at once. The chirping of crickets only deepened the stillness. About eight o'clock, a strange mass of tones came surging and waving through the pines. "That's the death song," said Black, as he reined up his horse to listen. "Some Indian is dead." Soon, two glaring watch-fires shone red through the forest, marking the place of congregation. The fire glare and the wild wailing came with indescribable impressiveness through the still, dark woods. I listened eagerly as the weird curves of woe swelled and cadenced, now rising steep like glacial precipices, now swooping low in polished slopes. Falling bowlders, and rushing streams, and wind tones caught from rock and tree were in it. When at length we rode away, and the heaviest notes were lost in distance, I wondered that so much of mountain nature should well out from such a source. Miles away, we met Indian groups slipping through the shadows on their way to join the death wail. Farther on, a harsh grunting and growling seemed to come from the opposite bank of a brook along which we

rode. "What? Hush! That's a bear," ejaculated Black, in a gruff, bearish undertone. "Yes," he said, "some rough old Bruin is sauntering this fine night, seeking some wayside sheep lost from migrating flocks." Of course, all night-sounds, otherwise unaccountable, are accredited to bears. On ascending a sloping hillock, less than a mile from the first, we heard another grunting bear, but whether or not daylight would transform our bears to pigs, may well be counted into the story.

Past Bower Cave we went and along a narrow winding trail in deep shadow. It was so dark that I had to throw the reins on Browny's neck and trust to his skill; for I could not see the ground, and the hillside was steep. A fine, bright tributary of the Merced sang far beneath us, as we climbed higher, higher, through the hazels and dogwoods that fringed the rough, black boles of spruces and pines. We were now nearing the old camping ground of the Pilot Peak region, where I learned to know the large nodding lilies *(L. pardalium),* so abundant along these streams, and the groups of alder-shaded cataracts, so characteristic of the North Merced Fork.

Moonlight whitened all the long fluted slopes of the opposite bank, but we rode in continuous shadow. The rush, and gurgle, and prolonged a-a-a of the stream coming up, sifting into the wind, was very impressive and solemn. It was here that you first seemed to join me. I reached up as Browny carried me underneath a big Douglas spruce, and plucked one of its long, plumy sprays which brought you in a moment from the Oakland dead. You are more spruce than pine, though I never definitely knew it until now. Here were miles and miles of tree scripture, along the sky: a Bible that will one day be read. The beauty of its letters and sentences have burned me like fire, through all these Sierra seasons. Yet I cannot interpret their hidden thoughts. They are terrestrial expressions of sun, pure as water and snow. Heavens! listen to the wind song! I am still writing beneath that grand old pine in Black's yard; and that other companion scarcely less noble, back of which I took shelter during the earthquake, is just a few yards beyond. The shadows of their boles lie like charred logs on the gray sand; while half the yard is embroidered with their branches and leaves. There goes a woodpecker with an acorn to drive into its thick bark for winter, and well it may gather its stores, for I can myself detect winter in the wind!

Few nights of my mountain life have been more eventful than that of my ride in the woods from Coulterville, when I made my reunion with the winds and pines. It was eleven o'clock when we reached Black's ranch. I was weary, and soon died in sleep. How cool, and vital, and re-creative was the hale young mountain air! On, higher, higher, up into the holy of holies of the woods. Pure, white, lustrous clouds overshadowed the massive congregations of silver fir and pine. We entered, and a thousand living arms were waved in solemn blessing. An infinity of mountain life. How complete is the absorption of one's life into the spirit of mountain woods! No one can love or hate an enemy here, for no one can conceive of such a creature as an enemy. Nor can one have any distinctive love of friends. The dearest and best of you all seemed of no special account, mere trifles. Hazel green water, famous among mountaineers, distilled from the pores of an ancient moraine, spiced and toned in a maze of fragrant roots. Winter does not cool it, nor summer warm it. Shadows over shadows keep its fountains always cool. Moss and felted leaves guard from spring and autumn frosts; while a woolly robe of snow protects from the intenser cold of winter. Bears, deer, birds, and Indians love alike the water and the nuts of hazel green; while the pine squirrel reigns supreme and haunts its incomparable groves like a spirit. Here a grand old glacier swept over from the Tuolumne ice fountains, into the basin of the Merced, leaving the hazel-green moraine for the food of her coming trees, and the fountains of her predestined waters.

Along the Merced divide, to the ancient glacial lake-bowl of Crane's Flat, was ever fir or pine more perfect? What groves! What combinations of green and silver-gray and glowing white of glinting sunbeams! Where is leaf or limb wanting; and is this the upshot of the so-called "mountain glooms and mountain storms?" If so, is Sierra forestry aught beside an outflow of Divine Love? These round-bottomed grooves sweeping across the divide, and adown whose sides our horses canter with accelerated speed, are the pathways of ancient ice-currents, and it is just where these crushing glaciers have borne down most heavily, that the greatest loveliness of grove and forest appears.

A deep canyon filled with blue air now comes in view on the right.

That is the valley of the Merced, and the highest rocks visible through the trees belong to the Yosemite Valley.

More miles of glorious forest, then out into free light and down, down, down, into the groves and meadows of Yosemite. The new wagon road has opened out some very striking views both up and down the Valley. How simple all the problems are that I studied last winter! Yet how hopeless seems the work of opening other eyes by mere words! No one will ever know the grandeur of this Sierra sculpture in its entirety, without the same study on the spot.

No one of the rocks seems to call me now, nor any of the distant mountains. Surely this Merced and Tuolumne chapter of my life is done.

I have been out on the river bank with my letters. How good and wise they seem to be! You wrote better than you know. All together they form a precious volume whose sentences are more intimately connected with my mountain work than any one will ever be able to appreciate.

AN ACT OF HEROISM

IN certain of his wanderings in Alaska, undertaken to further his study of glaciers, Mr. Muir was accompanied by the Reverend S. Hall Young, then a Presbyterian Missionary. Companions in privation and danger, the two men formed for each other a strong, close friendship which was destined to be tested by a dramatic incident nearly approaching the tragic.

It happened in Southern Alaska. On their approach to a mountain, twelve thousand feet, or more, in height, they decided to ascend it in order to observe the surrounding country. They left their canoe *cached* on the river banks below, and, visiting an Indian village near, asked the best way to make the summit. By this time, day was far spent and they resolved to stop for the night. They found good pasture for their horses, and, close by, scented beds of pine *spiculae* for themselves. In the morning, they planned to ascend as far as their horses could climb, then, to camp again for the night, and, on the following morning to push on, leaving the horses hobbled. They could return to camp by the next nightfall. They were successful the first day, and the next morning found them at the fire, preparing the meal

which was to fortify them for the ascent. "Those clouds over yon have a stor-rm inside their black coats, which, like as not, they'll spill before the day's over; but, mon, I ken ye luve a stor-rm in the mountains as I do mysel'," exclaimed Muir, lapsing into brogue, as he is wont to do, when his imagination is fired, or his heart touched. Fearlessly, even gaily, the two made their way over steep slopes of basic rock, distintegrating lava, and rough *scoriae,* pausing now and then to talk about some treasure trove, or to enjoy the superb vistas revealed by breaking clouds below.

Presently, other dark clouds gathered and scurried in armies over the heavens; the winds almost whirled the two travelers off their feet; rain, sleet, hail, and snow were poured upon them; but they pushed on, shouldering the storm, which buffeted them like a human adversary. Several times, the missionary was tempted to suggest their return, but one glance at his companion trudging ahead killed his impulse. He said nothing, and followed, until a still fiercer blast swept down the mountain and threw him off his feet, upon the face of a glacier, or sloping mass of frozen snow. Its slippery surface afforded him no hold, and it was impossible to arrest his rapid downward slide.

Unconscious of what had happened, Muir pushed on. At length, receiving no answer to a question twice repeated, he turned round and found himself alone, with no trace of his companion. He called aloud, but there was no response. Returning, he came to the tell-tale sliding tracks, and shouted again. Still there was no answer. Then, slowly, and realizing that upon each step depended both their lives, he cut his way along the tracks, which led to the edge of a precipice. He looked into the profound chasm and his heart sank, for no one, it seemed, could fall into that fearful place and escape. "Young, me friend, are ye there?" he called. A low moan answered him, and, suddenly, a rift in the storm permitted him to see on the face of the precipice, a kind of shelf, an out-thrust mass of rock or snow, upon which lay the body of his friend.

With masterly care and skill, step by step, Muir cut his way. Roused from his swoon, the missionary looked up, and tried to move, but his legs were paralyzed. He tried to stir his hand, but both shoulders were dislocated. "What would you do?" he wailed. "Go

back. I'm nearly dead. You can not get me out. Don't risk your life! For God's sake, go back!"

Another step was cut by the man above, "I'll gang back, me friend, by and by, when I'm ready. I'm no ready yet." Nearer and nearer he came, and at length stood by Young's side. "It is folly, it is madness, to come here," moaned the disabled man. "It will be worse to try to get me out. Go, and save yourself."

Muir knelt beside him, feeling out the hurts. "Well, mon, ye're certainly in a bad fix, but I'll get ye out. Can ye stand it if I hurt ye a little?"

"Don't, John, don't try. Go back and save yourself," pleaded the other.

But the stout-hearted Scot bent over him. "So," he said, and turned the wounded man on his face. Gripping Young's collar with his teeth, and getting astride of him, he slowly lifted his burden, as a panther lifts her young, and began to drag it up the sloping shelf. It was the only way.

Then the struggle began, in silence, save for the raging of the storm, the panting of Muir, the stifled moans of the man he was carrying. One step, two, three, four—his breath grew more labored; five, six, seven, eight—his fingers bled; nine—his right hand gripped the hole above, his left foot felt for its resting place, dislodging a piece of ice, which went bounding down to the depths below. In spite of the cold, his forehead and cheeks streamed with sweat. Heavier grew the now insensible load. Four more steps, each a convulsive effort. Now, there are but two,—can he go on? One more! It is taken! Rescuer and rescued roll over together beyond the bulwark of a protecting stone.

Then, when Muir, himself unconscious for a time, recovered, he placed his friend under shelter, packed the snow about him to ward off the storm, piled up a heap of stones as a landmark, and went for aid, which, having procured, he led the rescuers from the valley straight to the spot where Young lay, so unerring was his instinct and mountain wisdom. The missionary was carried below into the valley, where he was nursed back to health by Muir, who then returned to his work, unaware, like all heroes, that he had transcended the ordinary man in courage, kindness and constancy.