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The Wild Gardens of the Yosemite Park.

John Muir
world; the doors stand wide open.

"There's somethin' of us that must still live on; we've got to join both worlds together an' live in one but for the other."
The doctor said that to me one day, an' I never could forget it; he said 't was in one o' his old doctor's books."

We sat together in silence in the warm little room; the rain dropped heavily from the eaves, and the sea still roared, but the high wind had done blowing.

We heard the far complaining fog horn of a steamer up the Bay.

"There goes the Boston boat out, pretty near on time," said Mrs. Todd with satisfaction. "Sometimes these late August storms'll sound a good deal worse than they really be. I do hate to hear the poor steamers callin' when they're bewildered in thick nights in winter, comin' on the coast. Yes, there goes the boat; they'll find it rough at sea, but the storm's all over."

Sarah Orne Jewett.

THE WILD GARDENS OF THE YOSEMITE PARK.

When California was wild, it was the floweriest part of the continent. And perhaps it is so still, notwithstanding the lowland flora has in great part vanished before the farmers' flocks and ploughs. So exuberant was the bloom of the main valley of the state, it would still have been extravagantly rich had ninety-nine out of every hundred of its crowded flowers been taken away,—far flowerier than the beautiful prairies of Illinois and Wisconsin, or the savannas of the Southern states. In the early spring it was a smooth, evenly planted sheet of purple and gold, one mass of bloom more than four hundred miles long, with scarce a green leaf in sight.

Still more interesting is the rich and wonderfully varied flora of the mountains. Going up the Sierra across the Yosemite Park to the Summit peaks, thirteen thousand feet high, you find as much variety in the vegetation as in the scenery. Change succeeds change with bewildering rapidity, for in a few days you pass through as many climates and floras, ranged one above another, as you would in walking along the lowlands to the Arctic Ocean.

And to the variety due to climate there is added that caused by the topographical features of the different regions. Again, the vegetation is profoundly varied by the peculiar distribution of the soil and moisture. Broad and deep moraines, ancient and well weathered, are spread over the lower regions, rough and comparatively recent and unweathered moraines over the middle and upper regions, alternating with bare ridges and domes and glacier-polished pavements, the highest in the icy recesses of the peaks, raw and shifting, some of them being still in process of formation, and of course scarcely planted as yet.

Besides these main soil beds there are many others comparatively small, formations of both glacial and weathered soils, sifted, sorted out, and deposited by running water and the wind on gentle slopes and in all sorts of hollows, pot-holes, valleys, lake basins, etc.,—some in dry and breezy situations, others sheltered and kept moist by lakes, streams, and waftings of waterfall spray, making comfortable homes for plants widely varied. In general, glaciers give soil to high and low places almost alike, while water currents are dispensers of special blessings, constantly tending to make the ridges poorer and the valleys richer. Glaciers mingle all kinds of material
together, mud particles and boulders fifty feet in diameter; water, whether in oozing currents or passionate torrents, discriminates both in the size and shape of the material it carries. Glacier mud is the finest meal ground for any use in the Park, and its transportation into lakes and as foundations for flowery garden meadows was the first work that the young rivers were called on to do.

Bogs occur only in shallow alpine basins where the climate is cool enough for sphagnum, and where the surrounding topographical conditions are such that they are safe, even in the most copious rains and thaws, from the action of flood currents capable of carrying rough gravel and sand, but where the water supply is nevertheless constant. The mosses dying from year to year gradually give rise to those rich spongy peat beds in which so many of our best alpine plants delight to dwell. The strong winds that occasionally sweep the high Sierra play a more important part in the distribution of special soil beds than is at first sight recognized, carrying forward considerable quantities of sand and gravel, flakes of mica, etc., and depositing them in fields and beds beautifully ruffled and embroidered and adapted to the wants of some of the hardiest and handsomest of the alpine shrubs and flowers. The more resisting of the smooth, solid, glacier-polished domes and ridges can hardly be said to have any soil at all, while others beginning to give way to the weather are thinly sprinkled with coarse angular gravel. Some of them are full of crystals, which as the surface of the rock is decomposed are set free, covering the summits and rolling down the sides in minute avalanches, giving rise to zones and beds of crystalline soil. In some instances the various crystals occur only here and there, sprinkled in the gray gravel like daisies in a sod; but in others half or more is made up of crystals, and the glow of the imbedded or loosely strewn gems and their colored gleams and glintings at different times of the day when the sun is shining might well exhilarate the flowers that grow among them, and console them for being so completely outshone.

These radiant sheets and belts and dome-encircling rings of crystals are the most beautiful of all the Sierra soil beds, while the huge taluses ranged along the walls of the great canions are the deepest and roughest. Instead of being slowly weathered and accumulated from the cliffs overhead like common taluses, they were all formed suddenly and simultaneously by an earthquake that occurred at least three centuries ago. Though thus hurled into existence at a single effort, they are the least changeable and destructible of all the soil formations in the range. Excepting those which were launched directly into the channels of rivers, scarcely one of their wedged and interlocked boulders has been moved since the day of their creation, and though mostly made up of huge angular blocks of granite, many of them from ten to fifty feet cube, trees and shrubs make out to live and thrive on them, and even delicate herbaceous plants,—draperia, collomia, zauschneria, etc.—soothing their rugged features with gardens and groves. In general views of the Park scarce a hint is given of its floral wealth. Only by patiently, lovingly sauntering about in it will you discover that it is all more or less flowery, the forests as well as the open spaces, and the mountain tops and rugged slopes around the glaciers as well as the sunny meadows.

Even the majestic cañon cliffs, seemingly absolutely flawless for thousands of feet and necessarily doomed to eternal sterility, are cheered with happy flowers on invisible niches and ledges wherever the slightest grip for a root can be found; as if Nature, like an enthusiastic gardener, could not resist the temptation to plant flowers everywhere. On high, dry rocky summits and plateaus, most of the plants are so small they make but little show
even when in bloom. But in the opener parts of the main forests, the meadows, stream banks, and the level floors of Yosemite valleys the vegetation is exceedingly rich in flowers, some of the lilies and larkspurs being from eight to ten feet high. And on the upper meadows there are miles of blue gentians and daisies, white and blue violets; and great breadths of rosy purple heathworts covering rocky moraines with a marvelous abundance of bloom, enlivened by humming birds, butterflies and a host of other insects as beautiful as flowers. In the lower and middle regions, also, many of the most extensive beds of bloom are in great part made by shrubs, — adenos-toma, manzanita, ceanothus, chamaebatia, cherry, rose, rubus, spirea, shad, laurel, azalea, honeysuckle, calycanthus, ribes, philadelphus, and many others, the sunny spaces about them bright and fragrant with mints, lupines, geraniums, lilies, daisies, goldenrods, castillejas, gilias, pent-stemons, etc.

Adenostoma fasciculatum is a handsome, hardy, heathlike shrub belonging to the rose family, flourishing on dry ground below the pine belt, and often covering areas of twenty or thirty square miles of rolling sun-beaten hills and dales with a dense, dark green, almost impenetrable chaparral, which in the distance looks like Scotch heather. It is about six to eight feet high, has slender elastic branches, red shreddy bark, needle-shaped leaves, and small white flowers in panicles about a foot long, making glorious sheets of fragrant bloom in the spring. To running fires it offers no resistance, vanishing with the few other flowery shrubs and vines and liliaceous plants that grow with it about as fast as dry grass, leaving nothing but ashes. But with wonderful vigor it rises again and again in fresh beauty from the root, and calls back to its hospitable mansions the multitude of wild animals that had to flee for their lives.

As soon as you enter the pine woods, you meet the charming little Chamaebatia foliata, one of the handsomest of the Park shrubs, next in fineness and beauty to the heathworts of the alpine regions. Like adenos-toma it belongs to the rose family, is from twelve to eighteen inches high, has brown bark, slender branches, white flowers like those of the strawberry, and thrice-pinnate, glandular, yellow-green leaves, finely cut and fernlike, as if unusual pains had been taken in fashioning them. Where there is plenty of sunshine at an elevation of three thousand to six thousand feet, it makes a close continuous growth, leaf touching leaf over hundreds of acres, spreading a handsome mantle beneath the yellow and sugar pines. Here and there a lily rises above it, an arching bunch of tall bromus, and at wide intervals a rose-bush or clump of ceanothus or manzanita, but there are no rough weeds mixed with it, — no roughness of any sort.

Perhaps the most widely distributed of all the Park shrubs and of the Sierra in general, certainly the most strikingly characteristic, are the many species of manzanita (Arctostaphylos). Though one species, the Uva-ursa, or bearberry, — the kiniknie of the Western Indians, — extends around the world, the greater part of them are Californian. They are mostly from four to ten feet high, round-headed, with innumerable branches, brown or red bark, pale green leaves set on edge, and a rich profusion of small, pink, narrow-throated, urn-shaped flowers like those of arbutus. The branches are knotty, zigzaggy, and about as rigid as bones, and the bark is so thin and smooth, both trunk and branches seem to be naked, looking as if they had been peeled, polished, and painted red. The wood also is red, hard, and heavy.

These grand bushes seldom fail to engage the attention of the traveler and hold it, especially if he has to pass through closely planted fields of them such as grow on moraine slopes at an elevation of about seven thousand feet,
and in canions choked with earthquake boulders; for they make the most uncompromisingly stubborn of all chaparral. Even bears take pains to go around the stoutest patches if possible, and when compelled to force a passage leave tufts of hair and broken branches to mark their way, while less skillful mountainers under like circumstances sometimes lose most of their clothing and all their temper.

The manzanitas like sunny ground. On warm ridges and sandy flats at the foot of sun-beaten cañon cliffs, some of the tallest specimens have well-defined trunks six inches to a foot or more thick, and stand apart in orchard-like growths which in bloomtime are among the finest garden sights in the Park. The largest I ever saw had a round, slightly fluted trunk nearly four feet in diameter, which at a height of only eighteen inches from the ground dissolved into a wilderness of branches, rising and spreading to a height and width of about twelve feet. In spring every bush over all the mountains is covered with rosy flowers, in autumn with fruit. The red pleasantly acid berries, about the size of peas, are like little apples, and the hungry mountaineer is glad to eat them, though half their bulk is made up of hard seeds. Indians, bears, coyotes, foxes, birds, and other mountain people live on them for months. Associated with manzanita there are six or seven species of ceanothus, flowery, fragrant, and altogether delightful shrubs, growing in glorious abundance in the forests on sunny or half-shaded ground, up to an elevation of about nine thousand feet above the sea. In the sugar-pine woods the most beautiful species is *C. integerinus*, often called California lilac, or deer brush. It is five or six feet high, slender, willowy, with bright foliage and abundance of blue flowers in close showy panicles.

Two species, *prostratus* and *procumbens*, spread handsome blue-flowered mats and rugs on warm ridges beneath the pines, and offer delightful beds to the tired mountaineer. The commonest species, *C. cordulatus*, is mostly restricted to the silver fir belt. It is white-flowered and thorny, and makes extensive thickets of tangled chaparral, far too dense to wade through, and too deep and loose to walk on, though it is pressed flat every winter by ten or fifteen feet of snow.

Above these thorny beds, sometimes mixed with them, a very wild, red-fruit ed cherry grows in magnificent tangles, fragrant and white as snow when in bloom. The fruit is small and rather bitter, not so good as the black, puckery chokecherry that grows in the canions, but thrushes, robins, and chipmunks like it. Below the cherry tangles, chinquapin and goldcup oak spread generous mantles of chaparral, and with hazel and ribes thickets in adjacent glens help to clothe and adorn the rocky wilderness, and produce food for the many mouths Nature has to fill. *Azalea occidentalis* is the glory of cool streams and meadows. It is from two to five feet high, has bright green leaves and a rich profusion of large, fragrant white and yellow flowers, which are in prime beauty in June, July, and August, according to the elevation (from three thousand to six thousand feet). Only the purple-flowered rhododendron of the redwood forests rivals or surpasses it in superb abounding bloom.

Back a little way from the azalea-bordered streams, a small wild rose makes thickets, often several acres in extent, deliciously fragrant on dewy mornings and after showers, the fragrance mingled with the music of the birds nesting in them. And not far from these rose gardens, *Rubus Nutkanus* covers the ground with broad velvety leaves and pure white flowers as large as those of its neighbor the rose, and finer in texture; followed at the end of summer by soft red berries good for bird and beast and man also. This is the commonest and the most beautiful of the whole blessed flowery fruity genus.

The glory of the alpine region in
bloomtime are the heathworts, cassiope, bryanthus, kalmia, and vaccinium, enriched here and there by the alpine honeysuckle _Lonicera conjuga__alis, and by the purple-flowered _Primula suffruticosa_, the only primrose discovered in California, and the only shrubby species in the genus. The lowly, hardy, adventurous cassiope has exceedingly slender creeping branches, scalelike leaves, and pale pink or white waxen bell flowers. Few plants, large or small, so well endure hard weather and rough ground over so great a range. In July it spreads a wavering, interrupted belt of the loveliest bloom around glacier lakes and meadows and across wild moory expanses, between roaring streams, all along the Sierra, and northward beneath cold skies by way of the mountain chains of Oregon, Washington, British Columbia, and Alaska to the Arctic regions; gradually descending, until at the north end of the continent it reaches the level of the sea; blooming as profusely and at about the same time on mossy frozen tundras as on the high Sierra moraines. Bryanthus, the companion of cassiope, accompanies it as far north as southeastern Alaska, where together they weave thick plushy beds on rounded mountain tops above the glaciers. Bryanthus grows mostly at slightly lower elevations; the upper margin of what may be called the bryanthus belt in the Sierra uniting with and overlapping the lower margin of the cassiope.

The wide bell-shaped flowers are bright purple, about three fourths of an inch in diameter, hundreds to the square yard, the young branches, mostly erect, being covered with them. No Highland'er in heather enjoys more luxurious rest than the Sierra mountaineer in a bed of blooming bryanthus. And imagine the show on calm dewy mornings, when there is a radiant globe in the throat of every flower, and smaller gems on the needle-shaped leaves, the sunbeams pouring through them. In the same wild cold region the tiny _Vaccinium myrtillus_, mixed with kalmia and dwarf willows, spreads thinner carpets, the down-pressed matted leaves profusely sprinkled with pink bells; and on higher sandy slopes you will find several alpine species of _eriogonum_ with gorgeous bossy masses of yellow bloom, and the lovely Arctic daisy with many blessed companions; charming plants, gentle mountaineers, Nature's darlings, which seem always the finer the higher and stormier their homes.

Many interesting ferns are distributed over the Park from the foothills to a little above the timber line. The greater number are rock ferns, — _pellaea_, _cheilanthes_, _polypodium_, _adiantum_, _woodsiia_, _cryptogramme_, etc., with small tufted fronds, lining glens and gorges and fringing the cliffs and moraines. The most important of the larger species are _woodwardia_, _aspidium_, _asplenium_, and the common _pteris_. _Woodwardia radicans_ is a superb fern five to eight feet high, growing in vaselike clumps where the ground is level, and on slopes in a regular thatch, frond over frond, like shingles on a roof. Its range in the Park is from the western boundary up to about five thousand feet, mostly on benches of the north walls of canons watered by small outspread streams. It is far more abundant in the Coast Mountains beneath the noble redwoods, where it attains a height of ten to twelve feet. The _aspidiurns_ are mostly restricted to the moist parts of the lower forests, _Asplenium filix-femina_ to marshy streams. The hardy, broad-shouldered _Pteris aquilina_, the commonest of ferns, grows tall and graceful on sunny flats and hillsides, at elevations between three thousand and six thousand feet. Those who know it only in the Eastern states can form no fair conception of its stately beauty in the sunshine of the Sierra. On the level sandy floors of Yosemite valleys it often attains a height of six to eight feet in fields thirty or forty acres in extent, the magnificent fronds outspread in a nearly
horizontal position, forming a ceiling beneath which one may walk erect in delightful mellow shade. No other fern does so much for the color glory of autumn, with its browns and reds and yellows changing and interblending. Even after lying dead all winter beneath the snow it spreads a lively brown mantle over the desolate ground, until the young fronds with a noble display of faith and hope come rolling up into the light through the midst of the beautiful ruins. A few weeks suffice for their development, then, gracefully poised each in its place, they manage themselves in every exigency of weather as if they had passed through a long course of training. I have seen solemn old sugar pines thrown into momentary confusion by the sudden onset of a storm, tossing their arms excitedly as if scarce awake, and wondering what had happened, but I never noticed surprise or embarrassment in the behavior of this noble pteris. Of five species of pellæa in the Park, the handsome andromedæfolia growing in brushy foothills with Adiantum emarginatum is the largest. P. Breveri, the hardiest and at the same time the most fragile of the genus, grows in dense tufts among rocks on storm-beaten mountain sides along the upper margin of the fern. It is a charming little fern four or five inches high, has shining bronze-colored stalks which are about as brittle as glass, and pale green pinnate fronds. Its companions on the lower part of its range are Cryptogramme acrostichoides and Phegopteris alpestis, the latter soft and tender, not at all like a rock fern, though it grows on rocks where the snow lies longest.

P. Bridgesii, with blue-green, narrow, simply pinnate fronds, is about the same size as Breveri and ranks next to it as a mountaineer, growing in fissures and around boulders on glacier pavements. About a thousand feet lower we find the smaller and more abundant P. densa, on ledges and boulder-strewn fissured pavements, watered until late in summer by oozing currents from snow banks or thin outspread streams from moraines, growing in close sods, its little, bright green, triangular, tripinuate fronds, about an inch in length, as innumerable as leaves of grass. P. ornithopus has twice or thrice pinnate fronds, is dull in color, and dwells on hot rocky hillsides among chaparral.

Three species of Cheilanthes,—California, gracillima, and myriophylla, with beautiful two to four pinnate fronds, an inch to five inches long, adorn the stupendous walls of the cañons however dry and sheer. The exceedingly delicate and interesting Californica is rare, the others abundant at from three thousand to seven thousand feet elevation, and are often accompanied by the little gold fern, Gymnogramme triangularis, and rarely by the curious little Botrychium simplex, the smallest of which are less than an inch high.

The finest of all the rock ferns is Adiantum pedatum, lover of waterfalls and the lightest waftings of irised spray. No other Sierra fern is so constant a companion of white spray-covered streams, or tells so well their wild thundering music. The homes it loves best are cave-like hollows beside the main falls, where it can float its plumes on their dewy breath, safely sheltered from the heavy spray-laden blasts. Many of these moss-lined chambers, so cool, so moist, and brightly colored with rainbow light, contain thousands of these happy ferns, clinging to the emerald walls by the slightest holds, reaching out the most wonderfully delicate fingered fronds on dark glossy stalks, sensitive, tremulous, all alive, in an attitude of eager attention; throbbing in unison with every motion and tone of the resounding waters, compliant to their faintest impulses, moving each division of the frond separately at times as if fingering the music, playing on invisible keys.

Considering the lilies as you go up the
mountains, the first you come to is *L. pardalinum*, with large orange-yellow, purple-spotted flowers big enough for babies' bonnets. It is seldom found higher than thirty-five hundred feet above the sea, grows in magnificent groups of fifty to a hundred or more, in romantic waterfall dells in the pine woods, shaded by overarching maple and willow, alder and dogwood, with bushes in front of the embowering trees for a border, and ferns and sedges in front of the bushes; while the bed of black humus in which the bulbs are set is carpeted with mosses and liverworts. These richly furnished lily gardens are the pride of the falls on the lower tributaries of the Tuolumne and Merced rivers, falls not like those of Yosemite valleys coming from the sky with rock-shaking thunder tones, but small, with low, kind voices cheerily singing in calm leafy bowers, self-contained, keeping their snowy skirts well about them, yet furnishing plenty of spray for the lilies.

The Washington lily (*L. Washingtonianum*) is white, deliciously fragrant, moderate in size, with three to ten flowered racemes. The largest I ever measured was eight feet high, the raceme two feet long, with fifty-two flowers, fifteen of them open; the others had faded or were still in the bud. This famous lily is distributed over the sunny portions of the sugar-pine woods, never in large garden companies like *pardalinum*, but widely scattered, standing up to the waist in dense ceanothus and manzanita chaparral, waving its lovely flowers above the blooming wilderness of brush, and giving their fragrance to the breeze. These stony, thorny jungles are about the last places in the mountains in which one would look for lilies. But though they toil not nor spin, like other people under adverse circumstances, they have to do the best they can. Because their large bulbs are good to eat they are dug up by Indians and bears; therefore, like hunted animals, they seek refuge in the chaparral, where among the boulders and tough tangled roots they are comparatively safe. This is the favorite Sierra lily, and it is now growing in all the best parks and gardens of the world.

The showiest gardens in the Park lie imbedded in the silver fir forests on the top of the main dividing ridges or hang like gayly colored scarfs down their sides. Their wet places are in great part taken up by *veratrum*, a robust broad-leaved plant, determined to be seen, and *habenaria* and *spiranthes*; the drier parts by tall cumbines, larkspurs, castilleias, lupines, hoackias, erigerons, valerian, etc., standing deep in grass, with violets here and there around the borders. But the finest feature of these forest gardens is *Lilium parvum*. It varies greatly in size, the tallest being from six to nine feet high, with splendid racemes of ten to fifty small orange-colored flowers, which rock and wave with great dignity above the other flowers in the infrequent winds that fall over the protecting wall of trees. Though rather frail-looking it is strong, reaching prime vigor and beauty eight thousand feet above the sea, and in some places venturing as high as eleven thousand.

Calochortus, or Mariposa tulip, is a unique genus of many species confined to the California side of the continent; charming plants, somewhat resembling the tulips of Europe, but far finer. The richest calochortus region lies below the western boundary of the Park, still five or six species are included. *C. Nuttallii* is common on moraines in the forests of the two-leaved pine; and *C. caruleus* and *nudus*, very slender, lowly species, may be found in moist garden spots near Yosemite. *C. albus*, with pure white flowers, growing in shady places among the foothill shrubs, is, I think, the very loveliest of all the lily family, — a spotless soul, plant saint, that every one must love and so be made better. It puts the wildest mountaineer on his good behavior. With this plant
the whole world would seem rich though none other existed. Next after Calochortus, Brodiaea is the most interesting genus. Nearly all the many species have beautiful showy heads of blue, lilac, and yellow flowers, enriching the gardens of the lower pine region. Other liliaceous plants likely to attract attention are the blue-flowered camassia, the bulbs of which are prized as food by Indians; fritillaria, smilicina, chlorogalum, and the twining climbing stropholirion.

The common orchidaceous plants are corallorhiza, goodyera, spiranthes, and habenaria. Cypripedium montanum, the only moccasin flower I have seen in the Park, is a handsome, thoughtful-looking plant living beside cool brooks. The large oval lip is white, delicately veined with purple; the other petals and sepals purple, strap-shaped, and elegantly curved and twisted.

To tourists the most attractive of all the flowers of the forest is the snow plant (Sarcodes sanguinea). It is a bright red, fleshy, succulent pillar that pushes up through the dead needles in the pine and fir woods like a gigantic asparagus shoot. The first intimation of its coming is a loosening and upbulging of the brown stratum of decomposed needles on the forest floor in the cracks of which you notice fiery gleams; presently a blunt dome-shaped head an inch or two in diameter appears, covered with closely imbricated scales and bracts. In a week or so it grows to a height of six to twelve inches. Then the long fringed bracts spread and curl aside, allowing the twenty or thirty five-lobed bell-shaped flowers to open and look straight out from the fleshy axis. It is said to grow up through the snow; on the contrary it always waits until the ground is warm, though with other early flowers it is occasionally buried or half buried for a day or two by spring storms. The entire plant — flowers, bracts, stem, scales, and roots — is red. But notwithstanding its glowing color and beautiful flowers, it is singularly unsympathetic and cold. Everybody admires it as a wonderful curiosity, but nobody loves it. Without fragrance, rooted in decaying vegetable matter, it stands beneath the pines and firs lonely, silent, and about as rigid as a graveyard monument.

Down in the main canions adjoining the azalea and rose gardens there are fine beds of herbaceous plants — tall mints and sunflowers, iris, onothera, brodiaea, and bright beds of erythrea on the ferny meadows. Bolandera, sedum, and airy feathery purple-flowered heuchera adorn mossy nooks near falls, the shading trees wreathed and festooned with wild grapevines and Clematis; while lightly shaded flats are covered with gilia and eunanus of many species, hosackia, arnica, chenactis, gayophytum, gnaphalium, monardella, etc.

Thousands of the most interesting gardens in the Park are never seen, for they are small and lie far up on ledges and terraces of the sheer canon walls, wherever a strip of soil however narrow and shallow can rest. The birds, winds, and down-washing rains have planted them with all sorts of hardy mountain flowers, and where there is sufficient moisture they flourish in profusion. Many of them are watered by little streams that seem lost on the temendous precipices, clinging to the face of the rock in lacelike strips, and dripping from ledge to ledge, too silent to be called falls, pathless wanderers from the upper meadows, which for centuries have been seeking a way down to the rivers they belong to, without having worn as yet any appreciable channel, mostly evaporated or given to the plants they meet before reaching the foot of the cliffs. To these unnoticéd streams the finest of the cliff gardens owe their luxuriance and freshness of beauty. In the larger ones ferns and showy flowers flourish in wonderful profusion, — Woodwardia, columbine, collomia, castilleia, draperia, geranium, erythrea, pink and
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scarlet mimulus, hosackia, saxifrage, sunflowers, and daisies, with azalea, spiraea, and calycanthus, a few specimens of each that seem to have been culled from the large gardens above and beneath them. Even lilies are occasionally found in these irrigated cliff gardens, swinging their bells over the giddy precipices, seemingly as happy as their relatives down in the waterfall dells.

Most of the cliff gardens, however, are dependent on summer showers, and though from the shallowness of the soil beds they are often dry, they still display a surprising number of bright flowers,—scarlet zuarschneria, purple bushpenstemon, mints, gilias, and bosses of glowing golden bahia. Nor is there any lack of commoner plants; the homely yarrow is often found in them, and sweet clover and honeysuckle for the bees.

In the upper cafions, where the walls are inclined at so low an angle that they are loaded with moraine material through which perennial streams percolate in broad diffused currents, there are long wavering garden beds, that seem to be descending through the forest like cascades, their fluent lines suggesting motion, swaying from side to side of the forested banks, surging up here and there over island-like boulder piles, or dividing and flowing around them. In some of these floral cascades the vegetation is chiefly sedges and grasses ruffled with willows; in others, showy flowers like those of the lily gardens on the main divides. Another curious and picturesque series of wall gardens are made by thin streams that ooze slowly from moraines and slip gently over smooth glaciated slopes. From particles of sand and mud they carry, a pair of lobe-shaped sheets of soil an inch or two thick are gradually formed, one of them hanging down from the brow of the slope, the other leaning up from the foot of it like stalactite and stalagmite, the soil being held together by the flowery, moisture-loving plants growing in it.

Along the rocky parts of the cañon bottoms between lake basins, where the streams flow fast over glacier-polished granite, there are rows of pothole gardens full of ferns, daisies, goldenrods, and other common plants of the neighborhood nicely arranged like bouquets, and standing out in telling relief on the bare shining rock banks. And all the way up the cañons to the Summit mountains, wherever there is soil of any sort, there is no lack of flowers, however short the summer may be. Within eight or ten feet of a snowbank, lingering beneath a shadow, you may see belated ferns unrolling their fronds in September, and sedges hurrying up their brown spikes, on ground that has been free from snow only eight or ten days, and is likely to be covered again within a few weeks; the winter in the coolest of these shadow gardens being about eleven months long, while spring, summer, and autumn are hurried and crowded into one month. Again, under favorable conditions, alpine gardens three or four thousand feet higher than the last are in their prime in June. Between the Summit peaks at the head of the cañons surprising effects are produced, where the sunshine falls direct on rocky slopes and reverberates among boulders.

Toward the end of August, in one of these natural hothouses on the north shore of a glacier lake 11,500 feet above the sea, I found a luxuriant growth of hairy lupines, thistles, goldenrods, shrubby potentilla, Spraguea, and the mountain epilobium with thousands of purple flowers an inch wide, while the opposite shore, at a distance of only three hundred yards, was bound in heavy avalanche snow,—flowery summer on one side, winter on the other. And I know a bench garden on the north wall of Yosemite in which a few flowers are in bloom all winter; the massive rocks about it storing up sunshine enough in summer to melt the snow about as fast as it falls. When tired of the confine-
ment of my cabin I used to camp out in it in January, and never failed to find flowers, and butterflies also, except during snowstorms and a few days after.

From Yosemite one can easily walk in a day to the top of Mount Hoffman, a massive gray mountain that rises in the centre of the Park, with easy slopes adorned with castellated piles and crests on the south side, rugged precipices banked with perpetual snow on the north. Most of the broad summit is comparatively level and smooth, and covered with crystals of quartz,—mica, hornblende, feldspar, garnet, zircon, tourmaline, etc., weathered out and strewn loosely as if sown broadcast; their radiance so dazzling in some places as fairly to hide the multitude of small flowers that grow among them; myriads of keen lance rays infinitely fine, white or colored, making an almost continuous glow over all the ground, with here and there throbbing, spangling lilies of light growing on the larger gems. At first sight only these crystal sunflowers are noticed, but looking closely you discover minute gilia, ivesias, eunanus, phloxes, etc., in thousands, showing more petals than leaves; and larger plants in hollows and on the borders of rills,—lupines, potentillas, daisies, harebells, mountain columbine, astragalus, fringed with heathworts. You wander about from garden to garden enchanted, as if walking among stars, gathering the brightest gems, each and all apparently doing their best with eager enthusiasm, as if everything depended on faithful shining; and considering the flowers basking in the glorious light, many of them looking like swarms of small moths and butterflies that were resting after long dances in the sunshine. Now your attention is called to colonies of woodchucks and pikas, the mounds in front of their burrows glittering like heaps of jewelry,—romantic ground to live in or die in. Now you look abroad over the vast round landscape bounded by the down-curving sky, nearly all the Park in it displayed like a map,—forests, meadows, lakes, rock-waves, and snowy mountains. Northward lies the basin of Yosemite Creek, paved with bright domes and lakes like larger crystals; eastward, the meadowy, billowy Tuolumne region and the Summit peaks in glorious array; southward, Yosemite; and westward, the boundless forests. On no other mountain that I know of are you more likely to linger. It is a magnificent camp ground. Clumps of dwarf pine furnish rosiny roots and branches for fuel, and the rills pure water. Around your camp fire the flowers seem to be looking eagerly at the light, and the crystals shine unweariedly, making fine company as you lie at rest in the very heart of the vast, serene, majestic night.

The finest of the glacier meadow gardens lie at an elevation of about nine thousand feet, imbedded in the upper pine forests like lakes of light. They are smooth and level, a mile or two long, and the rich, well-drained ground is completely covered with a soft, silky, plushy sod enamelled with flowers, not one of which is in the least weedy or coarse. In some places the sod is so crowded with showy flowers that the grasses are scarce noticed, in others they are rather sparingly scattered; while every leaf and flower seems to have its winged representative in the swarms of happy flower-like insects that enliven the air above them.

With the winter snowstorms wings and petals are folded, and for more than half the year the meadows are snow-buried ten or fifteen feet deep. In June they begin to thaw out, small patches of the dead sloppy sod appear, gradually increasing in size until they are free and warm again, face to face with the sky; myriads of growing points push through the steaming mould, frogs sing cheerfully, soon joined by the birds, and the merry insects come back as if suddenly
raised from the dead. Soon the ground is green with mosses and liverworts and dotted with small fungi, making the first crop of the season. Then the grass leaves weave a new sod, and the exceedingly slender panicles rise above it like a purple mist, speedily followed by potentilla, ivesia, bossy orthocarpus yellow and purple, and a few pentstemons. Later come the daisies and goldenrods, asters and gentians. Of the last there are three species, small and fine with varying tones of blue, and in glorious abundance, coloring extensive patches where the sod is shallowest. Through the midst flows a stream only two or three feet wide, silently gliding as if careful not to disturb the hushed calm of the solitude, its banks embossed by the common sod bent down to the water’s edge, and trimmed with mosses and violets; slender grass panicles lean over like miniature pine trees, and here and there on the driest places small mats of heathworts are neatly spread, enriching without roughening the bossy down-curling sod. In spring and summer the weather is mostly crisp, exhilarating sunshine, though magnificent mountain ranges of cumuli are often upheaved about noon, their shady hollows tinged with purple ineffably fine, their snowy sun-beaten bosses glowing against the sky, casting cooling shadows for an hour or two, then dissolving in a quick washing rain. But for days in succession there are no clouds at all, or only faint wisps and pencilings scarcely discernible.

Toward the end of August the sunshine grows hazy, announcing the coming of Indian summer, the outlines of the landscapes are softened and mellowed, and more and more plainly are the mountains clothed with light, white tinged with pale purple, richest in the morning and evening. The warm, brooding days are full of life and thoughts of life to come, ripening seeds with next summer in them or a hundred summers. The nights are unspeakably impressive and calm, frost crystals of wondrous beauty grow on the grass,—each carefully planned and finished as if intended to endure forever. The sod becomes yellow and brown, but the late asters and gentians, carefully closing their flowers at night, do not seem to feel the frost; no nipped, wilted plants of any kind are to be seen; even the early snowstorms fail to blight them. At last the precious seeds are ripe, all the work of the season is done, and the sighing pines tell the coming of winter and rest. Ascending the range you find that many of the higher meadows slope considerably, from the amount of loose material washed into their basins; and sedges and rushes are mixed with the grasses or take their places, though all are still more or less flowery and bordered with heathworts, sibbaldea, and dwarf willows. Here and there you come to small bogs, the wettest smooth and adorned with parnassia and buttercups, others tussocky and ruffled like bits of Arctic tundra, their mosses and lichens interwoven with dwarf shrubs. On boulder piles the red iridescent oxyria abounds, and on sandy, gravelly slopes several species of shrubby, yellow-flowered eriogonum, some of the plants, less than a foot high, being very old, a century or more, as is shown by the rings made by the annual whorls of leaves on the big roots. Above these flower-dotted slopes the gray, savage wilderness of crags and peaks seems lifeless and bare. Yet all the way up to the tops of the highest mountains, commonly supposed to be covered with eternal snow, there are bright garden spots crowded with flowers, their warm colors calling to mind the sparks and jets of fire on polar volcanoes rising above a world of ice. The principal mountain-top plants are phloxes, drabas, saxifrages, silene, cymopterus, hulsea, and polemonium, growing in detached stripes and mats,
—the highest streaks and splashes of
the summer wave as it breaks against
these wintry heights. The most beau­
tiful are the phloxes (douglasii and cæ­
spitosum), and the red-flowered silene
with innumerable flowers hiding the
leaves. Though herbaceous plants, like
the trees and shrubs, are dwarfed as they
ascend, two of these mountain dwellers,
Hulsea algida and Polemonium confor­
tum, are notable exceptions. The
yellow-flowered hulsea is eight to twelve
inches high, stout, erect, the leaves,
three to six inches long, secret in g a
rosiny, fragrant gum, stand in g up boldly
on the grim lichen-stained crags, and
never looking in the least tired or
di­

couraged. Both the ray and disk
flow­
ers are yellow, the heads nearly two
inches wide, and are eagerly sought for
by roving bee mountaineers. The
pole­
onium is quite as luxuriant and
trop­
ical-looking as its companion, about the
same height, glandular, fragrant, its blue
flowers closely packed
in
five
heads, twenty to forty in a head. It is
never far from hulsea,
growing at eleva­
tions between eleven and thirteen thou­
sand feet wherever a little hollow or
crev­

cice favorably situated with a handful of
wind-driven soil can be found.

From these frosty Arctic sky gardens
you may descend in one straight swoop
to the abronia, mentzelia, and e Stories
gardens of Mono, where the sunshine is
warm enough for palms.

But the greatest of all the gardens is
the belt of forest trees, profusely cov­
ered in the spring with blue and purple,
red and yellow blossoms, each tree with
a gigantic panicle of flowers fifty to a
hundred feet long. Yet strange to say
they are seldom noticed. Few travel
through the woods when they are in
bloom, the flowers of some of the show­
est species opening before the snow is
off the ground. Nevertheless, one would
think the news of such gigantic flow­
ers would quickly spread, and travelers
from all the world would make haste to
the show. Eager inquiries are made for
the bloomtime of rhododendron-covered
mountains and for the bloomtime of Yo­
semite streams, that they may be enjoyed
in their prime; but the far grander out­
burst of tree bloom covering a thousand
mountains — who inquires about that?
That the pistillate flowers of the pines
and firs should escape the eyes of careless
lookers is less to be wondered at, since
they mostly grow aloft on the topmost
branches, and can hardly be seen from
the foot of the trees. Yet even these
make a magnificent show from the top
of an overlooking ridge when the sun­
beams are pouring through them. But
the far more numerous staminate flow­
ers of the pines in large rosy clusters,
and those of the silver firs in count­
less thousands on the under side of the
branches, cannot be hid, stand where
you may. The mountain hemlock also
is gloriously colored with a profusion of
lovely blue and purple flowers, a specta­
cle to gods and men. A single pine or
hemlock or silver fir in the prime of its
beauty about the middle of June is well
worth the pains of the longest journey;
how much more broad forests of them
thousands of miles long.

One of the best ways to see tree flow­
ers is to climb one of the tallest trees
and to get into close tingling touch with
them, and then look abroad. Speaking
of the benefits of tree climbing, Thoreau
says: “I found my account in climbing
a tree once. It was a tall white pine,
on the top of a hill; and though I got
well pitched, I was well paid for it, for
I discovered new mountains in the hori­
zon which I had never seen before. I
might have walked about the foot of the
tree for three score years and ten, and
yet I certainly should never have seen
them. But, above all, I discovered
around me,—it was near the middle of
June,—on the ends of the topmost
branches, a few minute and delicate red
conelike blossoms, the fertile flower of
the white pine looking heavenward. I
carried straightway to the village the topmost spire, and showed it to stranger jurymen who walked the streets,—for it was court week,—and to farmers and lumbermen and woodchoppers and hunters, and not one had ever seen the like before, but they wondered as at a star dropped down."

The same marvelous blindness prevails here, although the blossoms are a thousandfold more abundant and telling. Once when I was collecting flowers of the red silver fir near a summer tourist resort on the mountains above Lake Tahoe, I carried a handful of flowery branches to the boarding house, where they quickly attracted a wondering, admiring crowd of men, women, and children. "Oh, where did you get these?" they cried. "How pretty they are--mighty handsome--just too lovely for anything--where do they grow?" "On the commonest trees about you," I replied. "You are now standing beside one of them, and it is in full bloom; look up." And I pointed to a blossom-laden Abies magnifica, about a hundred and twenty feet high, in front of the house, used as a hitching post. And seeing its beauty for the first time, their wonder could hardly have been greater or more sincere had their silver fir hitching post blossomed for them at that moment as suddenly as Aaron's rod.

The mountain hemlock extends an almost continuous belt along the Sierra and northern ranges to Prince William's Sound, accompanied part of the way by the pines; our two silver firs, to Mount Shasta, thence the fir belt is continued through Oregon, Washington, and British Columbia by four other species, Abies nobilis, grandis, amabilis, and lasiocarpa; while the magnificent Sitka spruce, with large, bright purple flowers, adorns the coast region from California to Cook's Inlet and Kodiak. All these, interblending, form one flowery belt—one garden blooming in June, rocking its myriad spires in the hearty weather, bowing and swirling, enjoying clouds and the winds and filling them with balsam; covering thousands of miles of the wildest mountains, clothing the long slopes by the sea, crowning bluffs and headlands and innumerable islands and, fringing the banks of the glaciers, one wild wavering belt of the noblest flowers in the world worth a lifetime of love work to know it.

John Muir.

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NIGHT HYMNS ON LAKE NEPIGON.

Here in the midnight, where the clark mainland and island Shadows mingle in shadow deeper, profounder, 
Sing we the hymns of the churches, while the dead water 
Whispers before us.

Thunder is traveling slow on the path of the lightning; 
One after one the stars and the beaming planets 
Look serene in the lake from the edge of the storm-cloud, 
Then have they vanished.

While our canoe, that floats dumb in the bursting thunder, 
Gathers her voice in the quiet and thrills and whispers, 
Presses her prow in the star-gleam, and all her ripple 
Lapses in blackness,