The Oat Hill Mine Trail in Napa County

Richard O'Donnell

"GREAT PLEASURES are much less frequent than great pains," says the philosopher David Hume, relying on the evidence of common experience.[1] Whatever we think of Hume's observation, our common experience might agree that places of startling beauty are less frequent than plain ones. The upland landscape north of Calistoga possesses a startling and austere beauty. Close to home and endowed with several rare, uncommon, or simply pretty plants, historical places, and unusual geological features, this place is unique. It is accessible by a well-graded trail that will reward the effort to ascend it with an unforgettable experience. The story that follows is minimalist, scientifically speaking; its intention is not to teach or persuade, but rather to present through a simple statement of facts, features, and, now and then my feelings about them, a comprehensive overview of this remarkable trail and the unusual landscape it traverses.

On January 17, 2000, I began my first hike on the Oat Hill Mine Trail (hereafter OHMT) in overcast and drizzle. By mid-January 2001 I had hiked the western and central sections of the trail over thirty times and had become acquainted with the adjacent canyons, ridges, hillsides, and meadows. In winter and spring 2001, having been given permission by the property owners to hike on private lands through which the northern section of the OHMT runs, I completed the first draft, as it were, of my informal photographic survey of the flora of the OHMT, end to end. My objective throughout has been to document in slides the flowering plants on and near the OHMT through the year from their early stages through senescence. This is the first narrative account of that exercise.

[1]David Hume, "Essay 1," in *Essays Moral, Political & Literary* (London: Longmans, Green & Co., 1898).

Geography

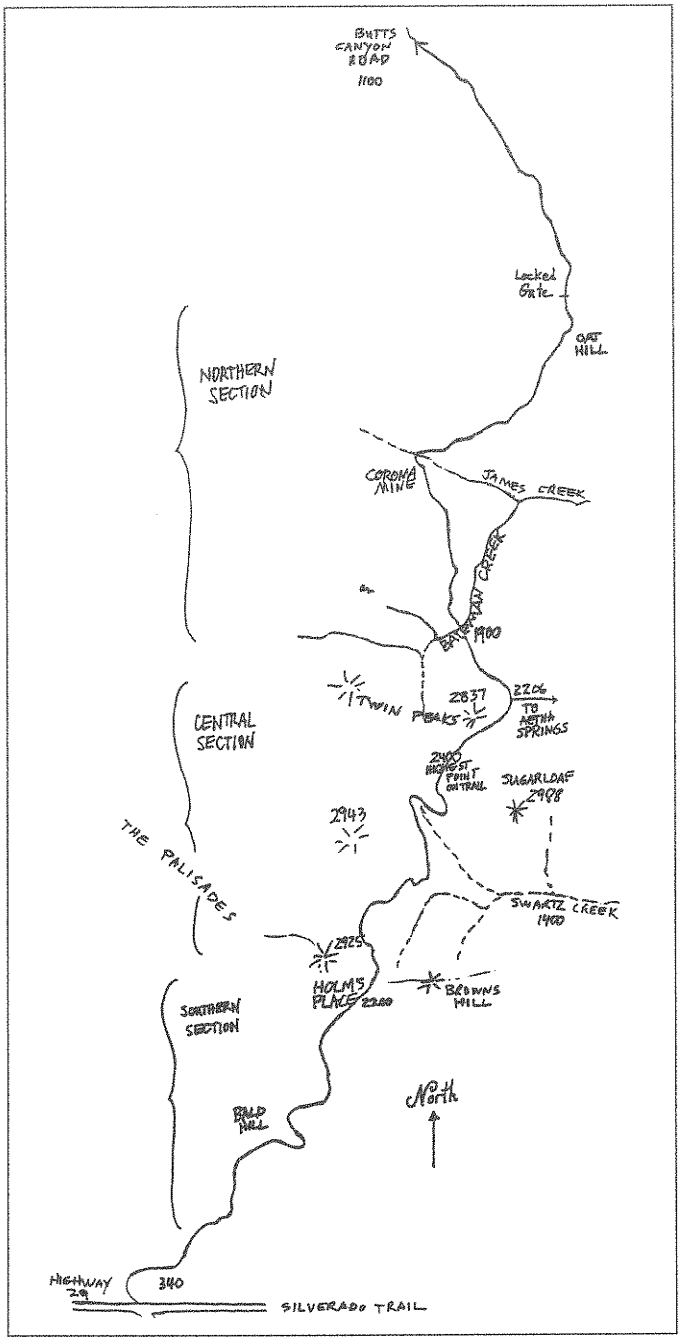
The Oat Hill Mine Trail runs about fifteen miles roughly north from Highway 29 outside of Calistoga to Butts Canyon Road, south of Middletown. The trail itself is open to hikers from Calistoga or from the R. L. Stevenson State Park via the new Palisades Trail. Some property owners, especially near the top of the Aetna Springs Road, have been known to object in person, in a less than friendly way, to hikers passing through. Other property owners do not object to people using the trail. In addition, the uppermost southern section of the trail immediately around Holm's Place (about which there is more below) is state park property. Practically speaking, therefore, the first eight or ten miles of trail and surroundings from Calistoga can be comfortably explored. Hunters use the northern and central sections in deer season. I strongly advise you not to use those sections of trail at that time. In general, however, please respect the rights of the property owners and preserve the generous welcome of those who offer it.

The elevation at the Calistoga trailhead is about 340 feet above sea level. The trail climbs five miles to the Palisades,[2] passing through them at 2,200 feet. It remains fairly level thereafter, staying high above Schwartz Creek which spills east out of the hills into Pope Valley at Aetna Springs. The highest elevation along this segment of the trail is 2,400 feet. Thereafter, the trail descends to Butts Canyon Road, meeting it at 1,100 feet.

Although the landform over which the trail passes is well defined by Long Canyon to the north, Butts Canyon on the northeast, Pope Valley to the southeast, the Napa Valley to the southwest, and Mt. St. Helena to the northwest, it has no single name. Topographically, it is a gradually sloping shelf hanging off the southern midsection of Mt. St. Helena. The shelf retains its elevation for about six to seven miles, descending slowly thereafter to join the ridges and promontories, including Stag's Leap and Howell Mountain, terminating at Mt. George, south of Napa. One writer called the entire ridge that forms the east side of Napa Valley, including this area, the Howell Mountains.[3] Others have called it "Greater Mt. St. Helena," while others, who were correct in a general way, thought the area was the site of a volcano and called it "The Craters."

[2]The Palisades is the name given to a prominent feature of the ridge northwest above Calistoga. It is a formation of dark, columar andesitic rock pushed up by tectonic action. It takes the form of sheer cliffs rising in some places several hundred feet and extending about five miles southeast along the Napa Valley.

[3]James O. Berkland, "Geology of the Napa Valley Area with New Data on the Age of the Sonoma Volcanics and the Underlying Petaluma Formation," in *Annual Field Trip Guidebook* (Geological Society, Sacramento, 1971).



Sketch map of the Oat Hill Mine Trail.

I divide the trail into three parts: the southern section is the five-mile climb from Calistoga to the pass through the Palisades; the central section runs another three or four miles from the Palisades to the top of the Aetna Springs Road; and the northern section has two subsections. The first northern subsection starts at the Aetna Springs Road and ends at the locked gate at Oat Hill; the second northern subsection starts at the locked gate and ends at the Butts Canyon Road. The second subsection is mostly paved and fenced with several houses along it. I do not describe it here.

Geology

According to Berkland,[4] the Howell Mountains are composed of Sonoma Volcanics 4,000 feet thick, with rhyolitic flows, including obsidian, near the top. A geologic map[5] shows the area around the southern and central parts of the trail as agglomerate and welded tuff.[6] The dark volcanic agglomerate, with patches of glassy vitrophyres[7] and whitish rhyolitic ash flows, forms rough and irregular outcrops, cliffs, towers, and boulder fields. Taken together they give the area a harsh appearance. Possibly it's the often ominous way these dark abrasive rocks loom over the trail or lie scattered and askew in the gravelly meadows that makes them appear so inhospitable. The landscape is softened, however, by woodland, chaparral, and meadow that have rooted in the weathered and eroded volcanic soil.

As the trail descends toward Butts Canyon, it enters an area of Franciscan rocks consisting of sandstone, shale, siltstone, greywacke, and chert with inclusions of serpentinized ultramafic rocks (serpentinite) including some interesting silica-carbonate rocks that crumble when touched. It was in this serpentine area that mercury mining was pursued vigorously in the late nineteenth century and intermittently thereafter. Here, scattered across the landscape, are artifacts of the mining period: rusty old machinery, one-of-a-kind furnaces, slag heaps, collapsed mine shafts, and the stone foundations of some of the buildings of the old town of Oat Hill.

The Sonoma Volcanics, as the name suggests, have a volcanic source. Josiah Whitney, the first professional geologist to publish an opinion on the specific volcanic source, opined that it was Mt. St. Helena, a view that prevailed for

[4]Ibid.

[5]This map, drawn by Steven Weiss in 1994, was privately commissioned by a property owner and is not available commercially.

[6]Agglomerate is a coarse volcanic rock consisting of non-angular chunks of all sizes in a finer matrix. Tuff is something else.

[7]Vitrophyres are volcanic glass with megascopic crystals afloat in a glassy ground mass.

many years. More recently, analysts have reached other conclusions. Geologists have concluded that Mt. St. Helena is the result of uplift, not volcanism and that the volcanic source of the Sonoma Volcanics was in the area of the Palisades. One professional geologist who lives just across the street from Mt. St. Helena believes that, if there was a single source, his ranch may be located in the eroded crater of it. But rather than one source, analysis has suggested that several eruptive events over millions of years and from several fissure-like vents, sometimes oozing, sometimes explosive (creating pyroclastic surge deposits), produced the layers of lava and ash. The most recent activity was about two million years ago. The most succinct description I've seen of the major volcanic geology of the OHMT and vicinity is "dark gray weathered unwelded to densely welded largely glassy lithic rich rhyolitic ash flow tuff."[8] If you add to this the vast stretches of agglomerate accumulated in the area, you've got a pretty good picture.

Two interesting geologic features to notice along the trail are the caves and the plugs. There is a "cave" about three miles north of Holm's Place right along the trail. There's a fire circle and some stacked wood in it; clearly, people have used it for shelter. I've been told that this cave, and others like it that are visible but not as easy to get to, are large volcanic gas bubbles laid open lengthwise. The cave along the trail is about six to eight feet deep, four feet high, and about twelve feet long. It contains in its damp recesses the only population of Five-finger fern *Adiatum aleuticum* I've found in the area so far. It commands a fine view down Schwartz Creek and of Sugarloaf, one of the most prominent of several volcanic plugs.

Sugarloaf, the largest cone-shaped hill on the central section, is an intrusive andesitic plug. It rises a couple hundred feet above the surrounding ash flow tuff and agglomerate and marks the site of a former volcanic vent from which that lava and ash once spewed. The plug acts like a cap on the vent. It is one of several plugs, including the nearby Twin Peaks, that monumentalize earlier volcanic activity.

History

The Oat Hill Mine Trail was originally a wagon road. That it exists at all is a consequence of good luck, perseverance, economics, and greed. The good luck happened in 1861 when a hunter discovered cinnabar near Aetna Springs. Cin-

[8]This sentence is an annotation of the Weiss map. For a good review of the literature on the geology, see Ken Stanton's excellent *Mt. St. Helena and R. L. Stevenson State Park: A History and Guide* (St. Helena, CA: Bonnie View Books, 1993).

Figure 1. The town of Oat Hill in winter. Notations on the back of the photograph indicate that the buildings in the picture are Dr. Blodgett's office and the town store. The town had a peak population exceeding 200. The photographer is standing among the houses of the townspeople, looking southwest. The snow has accumulated to a significant depth for these altitudes and latitudes. The picture also shows two conical peaks, at that time known as Twin Peaks. While the aptness of the name is evident from this perspective, it isn't at all obvious from the opposite perspective, i.e., from the central section of the trail. From there the left peak stands out while the right peak is invisible. Perhaps because activity shifted to the west, the left peak is now known as Sugarloaf while the right is the more southern of the current Twin Peaks.

nabar contains mercury and mercury was (and still is) a valuable commodity. His discovery was followed by the development of several mining enterprises in the area, including the Oat Hill Mine. The Oat Hill Mine began production in 1876. Other mining operations followed. At one time over 200 people lived in the town that grew up around the mine.

Providing the necessities of life to the townsfolk and transporting the mercury to the railhead at Calistoga was challenging. The nearby Butts Canyon Road got the goods to Middletown, but from that point to Calistoga wagons had to use a toll road at considerable cost. The mines persevered under the burden of that cost for nearly twenty years when the Oat Hill Mine Road was completed in 1893. Five years later, a Finnish immigrant and ship's carpenter named Karl Holm constructed several buildings of well-hewn volcanic rock

and planted an orchard along the trail. Holm's Place was a popular stopover for the weary horses and teamsters at the end of the long climb from Calistoga. It was sorely missed when Holm's Place was abandoned in 1919. The Oat Hill Mine Road continued to be the main route to Calistoga and, thus, was heavily used until about 1924 when it was replaced by what is now Highway 29. The road has been little used since. Lack of maintenance has allowed the effects of erosion to accumulate, making it too narrow for cars to pass, and it is washed out in a number of places. But the tracks worn long ago into the ash flows by the iron-rimmed wagon wheels are still visible in several places. The trail has become in large part accessible only by foot, thank goodness, for were it passable by car it would certainly lose its remoteness and charm.[9]

Travels on the OHMT

The OHMT passes through several plant communities, each of which contains a wide variety of flowering plants, a number of which are rare or distributionally unusual. The visible members of each plant community change as the year goes by. I am finding, as I approach the end of my second year intensively exploring the trail, that seasonal differences vary; for example, a plant may be abundant one year and scarce the next. This was the case with Jewelflower *Streptanthus glandulosus*. In 2000 it was fairly abundant in a variety of habitats. It was scarce everywhere in 2001. Plants may appear in one year where they were absent before as was the case with Sticky Chinese houses *Collinsia tinctoria* and *Scutellaria californica*, which appeared on the lower southern section in 2001 where they had not been in 2000. Some plants bloom later or earlier. Probably because 2001 was drier and warmer than 2000, many flowers were earlier and didn't last as long. In addition to the volume and distribution of rainfall, annual variations in plant populations, abundance, and distribution may be driven by temperature, soil, insolation, elevation, wind, snow, and expanding or declining growth of nearby plants (increasing/decreasing competition for space, water, shade, or nutrients), among other things. All this seems pretty obvious, except, perhaps the wind and snow (and ice). I add them because I saw considerable tree damage in 2001: large oak and fir branches had been snapped off; whole manzanitas, sometimes several in a group, had been uprooted, and the larger branches of others split off. Some places looked pretty devastated. I didn't experience especially high winds directly, but I did walk in snowfall and across accumulated snow on the ridges that rise about 700 feet

[9]For a more complete history of the OHMT, see pages 28–38 in Ken Stanton's other fine book *Great Hikes in and Around Napa Valley* (Mendocino: Bored Feet, 1997).

above the trail. Residents of the area have described the winter of 2000–2001 as a particularly snowy one. The weight of the snow and ice on the branches may have supplemented the destructive force of the wind or pulled the branches down on its own. The net effect of the damage is to increase space for sun to shine and sun-loving plants to grow where they've not grown before . . . we'll see.

The southern end of the trail, in the Napa Valley, gets frequent persistent summer fog. The vegetation there is much denser than the vegetation along the upper sections of trail where the fog seldom settles. I've seen the fog cover the southern and central sections only once. Usually it tops out at Holm's Place, sometimes blowing through the pass, but seldom getting far beyond it. Beyond the pass, the dense fog gives way to warm sun and cooling breezes.

Rainfall varies greatly along the trail. The southern section gets about 35 inches of rain annually, while the northern section can get as much as 100 inches. There are no records for the central section. Mt. St. Helena, rising 2,000 feet above the rugged landscape, affects the weather on and around the OHMT. It seems to me that it causes air, particularly northern air, to rise and cool, dropping more rain on the central and northern sections. Presumably the greater amount of rainfall that charges the northern hills with the greater volume of water keeps the creeks running year-round. There are no year-round creeks on the southern section. Even Schwartz Creek, which drains the highlands above the OHMT, is a seasonal creek until it is halfway to Aetna Springs.

First Quarter: January–March

In winter, leafless Blue oaks *Quercus douglasii*, draped in *Usnea* lichen, dominate the first mile or two of the trail along with Interior live oaks *Q. wislizenii*, Madrone *Arbutus menziesii*, and Douglas fir *Pseudotsuga menziesii*. The thick *Usnea* bears witness to the frequent fog that lies in the Napa Valley and the thirty-five inches of annual rainfall. It's just the first of several signs of climate-related factors that help shape the diverse environment along the OHMT.

The first one or two miles of the rain-soaked trail are lined with the basal leaves of sanicle and buttercups, Indian warrior *Pedicularis densiflora*, *Castilleja foliolosa*, *Castilleja applegatei martinii*, *Lupinus albifrons*, various vetches, peas, and lotuses, *Phacelia imbricata*, Checker lily *Fritillaria affinis*, milkmaids, houndstongue, and especially Shooting stars *Dodecatheon hendersonii*. These are among the very first herbaceous plants to bloom. Most noteworthy, however, in these dark, wet, early months is the large, handsome Common manzanita *Arctostaphylos manazanita*, full of fragrant flowers. Some of the brick-red trunks of these magnificent old plants are more than

eighteen inches in diameter, twisted in bundles like muscles. The faint sweet scent and bright white panicles of their flowers help offset the damp winter overcast.

The trail then opens up to meadows and views of Napa Valley. The next three miles lead to the Palisades. The attractive grassy slopes of Bald Hill, the promising corridor of ceanothus, even the ancient wheel ruts in the soft volcanic ash flows, all of which would otherwise dominate the senses and the imagination, are overpowered by the severe andesitic Palisades looming over the trail, looking dark, sheer, and lifeless. As the trail turns north and passes below the Palisades, the familiar fragrance of Chaparral flowering current *Ribes malvaceum* is distinct. It is one of the few plants flowering now; the scent of its foliage and its pinkish, pendulous flowers add a bit of color to the grim, lowering clouds.

The final mile or two to the pass through the Palisades will be a marvel in a month or two, but in winter only a solitary, diminutive California gooseberry *Ribes californicum* is in flower. Its distinctive reflexed white sepals, white petals, small dark green leaves, and lack of internodal thorns are diagnostic. The little flowers, glittering with raindrops, dangle from the small shrub's stem like tiny white bats.

Thereafter the trail levels off as it crosses through a narrow pass in the Palisades, the tops of which rise 700 feet above the trail. This is the site of Holm's Place, marked by a sign. It is now also the intersection with the new Palisades Trail that runs below the Palisades six miles from R. L. Stevenson State Park.

If you retrace your steps about an eighth of a mile, you'll find a gravelly flat next to the trail. In late February/early March the pointed leaf tips of Purdy's fritillary *Fritillaria purdyi* poke through the soil. In a few weeks it will flower, almost invisible, its cryptically colored blossoms only an inch or two above the coarse volcanic gravel.

F. purdyi is an impressive, if not beautiful, plant. With its rusty orange anthers set off against a semi-gloss, cream-colored cup of mottled black and yellow, looking skyward, it's more charming than grand. Its rarity gives it a celebrity that might otherwise elude it, as it has *F. affinis*, the commonness of which may make some indifferent to its imposing presence. I have found *F. purdyi*, rare though it is, in many places around the OHMT, in volcanics, and, further on, in serpentine. This is the first of several instances of serpentine "endemics" flourishing in the non-serpentine soils of the Sonoma Volcanics.

In the same patch of gravel the fleshy leaves of Bitterroot *Lewisia rediviva* spread over the ground like diminutive sea anemones. It will be a month or more before they bloom, exquisitely white-flowered. They, too, are quite abundant in many places throughout the region. The purity of their whiteness is striking, and the contrast with the usually coarse gravel soil they enjoy is a

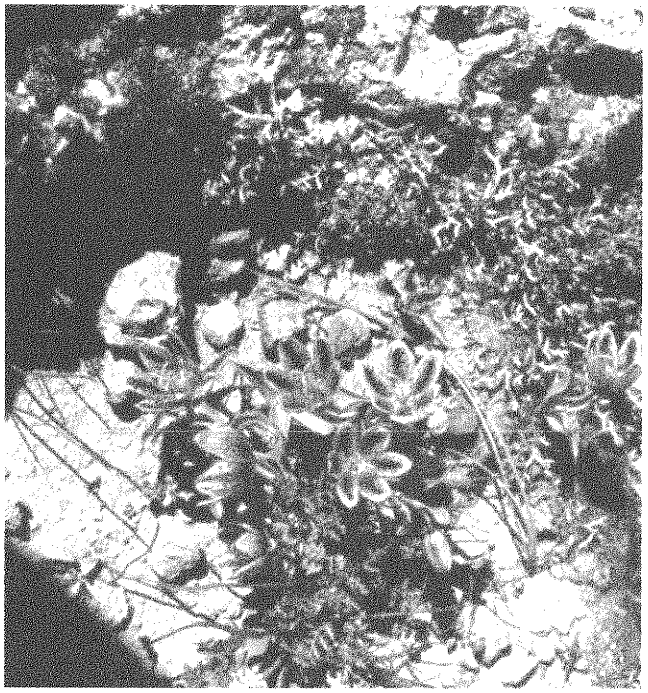


Figure 2. *Fritillaria purdyi* is locally abundant along the Oat Hill Mine Trail.

pleasant relief from the overcast sky. There's no question of their beauty: the pink-shaded buds open brightly white, with red stamens. Each time—and it happened many times—I brought my camera down for a close-up, my senses were entirely and gratefully lost in their delicate shades and shadows. In 2001 little red mites added a bit of animation and color among the densely overlapping petals. The bitterroot in Butts Canyon, only a few miles away and on serpentine, is consistently bright magenta. I haven't seen bitterroot in the serpentine on the northern section of the OHMT, but if it's there, I expect it will be magenta, too.

Just a few steps past Holm's Place, what appears to be an orange stain in the middle of the path is an efflorescence of Pygmy weed *Crassula connata*. It looks at first like a moss or an alga of some kind, but looking more closely, its blossoms and leaves are distinct. *Claytonia exigua* is plentiful here and elsewhere. About half a mile farther north, the trail passes a north-facing slope, shaded by Canyon oak *Q. chrysolepsis* and laurel. By mid-March its mossy bank is sprinkled with milkmaids and the mottled leaves of St. Helena fawn lily

Erythronium helenae. The leaves of this rare lily begin to appear in February, along with the brownish leaves of Cañon delphinium *D. nudicaule*. As the weeks pass, pinkish buds form and droop singly from their foot-high stems. And not long after that, the brilliant yellow and white flowers throw an abundant delicate light onto the damp mossy slope. These fragrant early bloomers grow several places on and off the OHMT, but this is the easiest place for the hiker to see them, even though he is more than five miles from the trailhead. There is a short period, usually in late March/early April, when *F. purdyi* and *E. helenae* are flowering near Holm's Place at the same time. *E. helenae* is another instance of a serpentine endemic that grows throughout these hills and valleys on Sonoma Volcanics.

In 2000 I saw among the *F. affinis*, milkmaids, and whatnot in the oak/madrone/fir forest a mile or two from the trailhead, several plants with strap-like leaves along the ground—clearly a monocot, but what monocot? I watched each time I passed for some sign of flower, but after growing longer and wider the leaves simply disappeared, leaving nothing behind. In 2001, I did the same and the same thing happened, only this time I found by chance an inconspicuous spike of *Piperia elegans*, lifting itself a few inches above the withered ribbons of its strap-like leaves, concealed in the shadows and debris of the forest floor.

The shrubs begin to grow again during this period. The deciduous shrubs like Creambush *Holodiscus discolor*, Oregon ash *Fraxinus dipetala*, Littleflowered beardtongue *Keckiella breviflora*, and several others sprout fresh new leaves. The evergreen shrubs like Napa fremontia *Fremontodendron californicum napense*, Mountain mahogany *Cercocarpis betuloides*, manzanita, and ceanothus blossom or put out buds. The Buckbrush *C. cuneatus* buds are marvels of compactness, looking a little like tiny raspberries. As they ripen and grow bigger, shades of pink, blue, and white appear through the closed calyx, until they burst open and fill the warming air with an unsurpassable sweetness.

The Manzanitas in Spring

Spring comes to the OHMT when the *A. manzanita* sets its buds and blossoms on the lower slopes of the southern section. It is followed by Stanford manzanita *A. stanfordiana* that appears in large numbers just beyond Holm's Place, becoming the dominant manzanita in the central section, especially on the ridges above the trail. Stanford manzanita is a nice-looking plant, flowering profusely and seldom exceeding six feet in height. In January, its pink buds are like tiny beads on a thread. Many of them ripen and open in March, but they lighten the ridges with buds and blossoms in May, too. It's nice to find an *A.*

manzanita flowering next to a flowering *A. stanfordiana* to see the contrasting leaf shades, shapes, and flower color. *A. canescens* is represented on the central section by a few plants and is more common on the northern section. This one is to me the most beautiful of all, its pink-edged light gray-green leaves tightly packed on the stem, its foliaceous nascent inflorescence giving way to pink panicles of flowers that emerge in April. It is especially pleasant to see them next to *A. stanfordiana*; the contrasts are even more pronounced. Both are common on Mt. St. Helena, where I saw them budding in the foot-deep snow early in 2001. Finally, on the northern section, in serpentine, there is an abundance of *A. viscida*, a regular and important member of the serpentine community.

Second Quarter: April–June

This time of the year is the best for flowers. The ground is still wet, water runs in the creeks, the sky is often blue, and the air, though cool, is warming. Some wind-sheltered south-facing slopes are hot, while north-facing slopes remain damp and cool. Flowers are everywhere at all stages in their life cycle. The Chamise *Adenostoma fasiculatum* is beginning to blossom; the inflorescence of the plants on the upper southern section of trail is particularly dense and fragrant. I've learned to appreciate the finer qualities of this common plant—the singular beauty of each blossom, the way each blossom supplements the adjacent ones, creating a brocaded inflorescence. However, the most conspicuous flowering plants early in this period are the ceanothuses.

The OHMT and environs have eight *Ceanothus* species. All of them bloom in this period. The first to bloom is Buckbrush *C. cuneatus*. The dominant chaparral shrub on the upper reaches of the southern section and throughout the central section, buckbrush blooms in vast patches, turning the chaparral white and releasing its strong scent into the warm updrafts. If you walk above the chaparral, at the base of the Palisades, the updrafts are a solid fragrance, the taste of the air itself.

In addition to buckbrush, the central section of the OHMT has a few Wavyleaf ceanothus *C. foliosus*. It's a smaller plant. It grows in the shade as well as the open and blooms blue, with a more delicate fragrance. When it is blooming, the buckbrush is forming seeds. Even later, the Parry's ceanothus *C. parryi* blooms. Its inflorescence is quite different from that of the Buckbrush. Before flowering, the buds of Parry's ceanothus overlap like scales, and the panicles, in anthesis, exhibit many light-blue blossoms. Later still, the Deerbrush *C. integerrimus* blossoms and drapes its long panicles over the trail. Along the serpentine of the northern section of the OHMT, the white-flowered Musk brush *C. jepsonii albiflorus* flowers richly. This plant differs from its relative in Ma-

rin; it's bigger, and its flowers are white, while the Marin plant is usually low-growing and rock-hugging with richly scented flowers colored a beautiful deep blue.

Up among the fir and pines in the woods a mile or so above the northern section of the trail, there are scattered patches of Mahala mat *Ceanothus prostratus occidentalis* and the rare *Ceanothus confusus*. *C. prostratus* grows in lightly shaded openings of the forest, under the pines. Its short branches, covered with small holly-like leaves, form low, tight mounds plastered to the soil, embracing the rocks or tightly gripping the slope of a roadcut. The fragrance of their blue flowers is the best of all; it's delicate, but substantial; it's got a little ginger in it, I think. *C. confusus* has a different habit: the tips of its decumbent branches reach upward and out from its low-growing center. It also has a slightly different habitat: it grows on the lightly shaded edges of woods and in serpentine. Its somewhat larger holly-like leaves and clusters of blue flowers are easier to spot along the trail as they rise above the fallen branches, leaves, and other forest debris. Its fragrance doesn't travel far or dominate the air like the thick smell of the musk brush; rather, it requires leaning down into the blossoms to catch the light scent that its blue flowers keep so close. The scent feels like cashmere and is gone in an instant.

Finally, the last to bloom is Coast whitethorn *Ceanothus incanus*. Bigger and more robust than all the others, the shrubs I have found stand ten to fifteen feet above a grassy meadow. They have domes of white flowers, buzzing with bees, wasps, butterflies, and beetles. I've seen these plants in only one place, a mile or so from the trail, along with Chokecherry *Prunus virginiana demissa*.

Close to the trail but hidden from view a mile or so north of Holm's Place is a single *Eriogonum compositum*. This plant is at the southern terminus of its range and therefore quite rare here (although there's a nice population near Table Rock). Its showy buds and blossoms, lifted above its spear-shaped leaves, attract insects of all kinds, including the butterflies out at this time of year.

A word about the butterflies: I've spotted at least fifteen species. All of them are interesting, and each has a singular relationship with one or more of the plants in the region, but the relationship of the checkerspot butterflies and *Castilleja foliolosa* is a particularly interesting one, easy to follow throughout the year.

Along the upper reaches of the southern section and throughout the central and northern sections, two checkerspot species are abundant and superficially alike: the Leanira checkerspot *Thessalia leanira* and the Chalcedon checkerspot *Occidryas chalcedona*. Both use *C. foliolosa* as their larval food plant. Since *C. foliolosa* doesn't die back entirely but has at least a few fresh leaves year-round, the checkerspot larvae use it much of the year. A few *C. foliolosa*

are flowering as early as January, and many more have thick fresh foliage. Some of the leaves and flowers will have a few tiny black caterpillars chewing on them. These larvae are just beginning to stir after a short dormant period that began in October or thereabouts. They eat and grow through March and their numbers seem to increase; they become much easier to see on the *C. foliolosa* as they grow, not only because they are bigger, but also because they favor the blossoms and show up very well against the soft red (or yellow) petals.

In April and May the larvae disappear to pupate. Generally well concealed, a brightly colored pupa can be seen now and then, attached to the side of a rock. By May the air is full of the black and red adults, stopping for nectar at Yerba Santa *Eriodictyon*, Wooly sunflower *Eriophyllum lanatum arachnoidium*, and chamise. The males emerge first. In June and July the numbers increase as more females emerge. They lay their eggs on the *C. foliolosa*, and in August the eggs hatch. The tiny black caterpillars feed as long as the foliage lasts and then enter a dormant state that breaks in January. The fall larvae spin a noticeable web among the drying *C. foliolosa* and are fairly easy to see.

The Meadows

Meadows along the OHMT are not meadows in the common sense of the word. Their grasses are short; the substrate is visible through the thin growth; they are often strewn with loose rocks and rock outcrops. They share these features with alpine meadows. Like alpine meadows, the OHMT meadows are open, breezy, and full of flowers and, while exceptional, they pass for meadows in my book.

And they have been ripening, too. The little nondescript green things that were poking up through the gravel or between the rocks a month ago take shape, blossom, and flourish. Among the many, *Mimulus kelloggii* is the most outstanding flower in the meadows. It makes up for its small stature with its brilliant color and abundance. *M. kelloggii* begins to appear toward the end of March, blooming throughout the second quarter, and doesn't disappear until the end of summer. Its flowering period is so long, in fact, that its meadow mates change at least once, and often twice, before it, too, disappears. It shares some meadows with other little early flowers like Popcorn flower *Plagiobothrys sp.*, Owlsclover *Castilleja attenuata*, and Linanthus sp. It shares other meadows with Blue dicks *Dichelostema capitata*, *Lupinus nanus*, Goldfields *Lasthenia californica*, and Nodding madia *Madia nutans*. While common here, nodding madia is a rare endemic. It grows only a few inches high and sometimes has the blanketing effect of goldfields. In 2001 *M. kelloggii* was joined by a particularly rich display of *Phacelia divaricata*, the dusty blue and the bright magenta complementing each other, accented by an intermingling

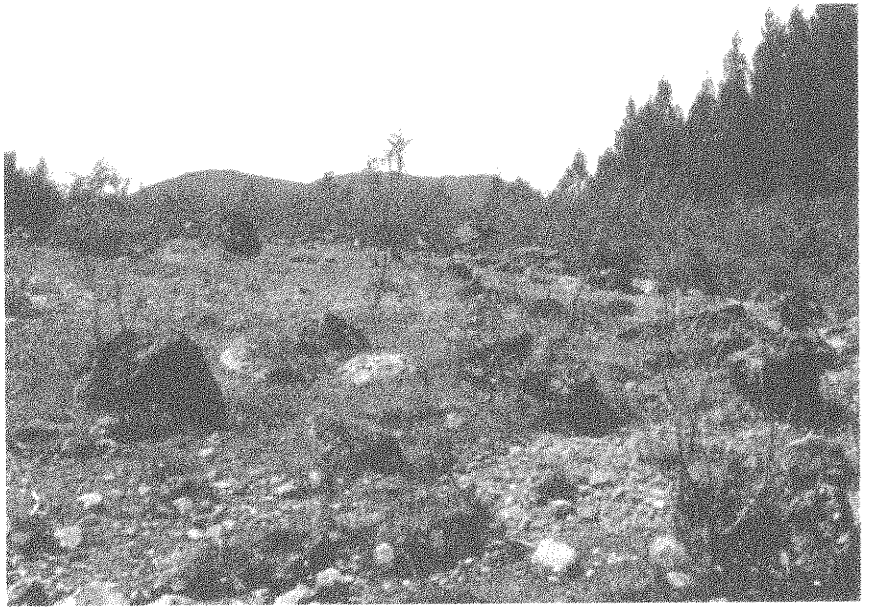


Figure 3. Rubbly volcanic openings along the Oat Hill Mine Trail support sheets of the endemic *Madia nutans.*

of a daylight-flowering variety of Evening snow *Linanthus dichotomus meridianus*. Later it will be among onions *A. cratericola*, *A. amplectens*, *A. falcifolium*, larkspur, Bitterroot *Lewisia rediviva*, Whiskerbrush *Linanthus ciliatus*, Sulphur flower *Eriogonum umbellatum bahiiforme*, and *Penstemon heterophyllus*.

The meadows sweeten with the coming of warm weather. Their grasses sweep the air clean. Sidalcea, meadow rue, and woodland star grow up and bloom. Dwarf cliff sedum *Parvisedum pumilum* covers the thin soil where the winter's water pooled in rocky open places. Flowerless in early spring, its orange leaves will be supplemented with bright yellow blossoms in May. Large patches of these tiny flowers fill the gravelly barrens that dot the meadows with a peculiar warmth that appears to rise from the gravel itself. The moss-covered rocks that are scattered in the meadows are decked out with *Sedum radiatum*, while the shadowed sides of the large rocks and the overhanging cliffs are grayish-yellow with *Sedum spathulifolium.*

Meadow rue *Thalictrum fendleri polycarpum* is beginning to bud and in a few weeks the male plants will loose their dangling stamens into the fresh breezes.

A Typical Day in Late April 2001

I make my way up the first few miles of the damp trail. It rained yesterday and cleared today to a cool, bright blue sky. The Buckeyes *Aesculus californica* have finally leafed out and send their slender flowerless spikes upward and out. The blue and Oregon oaks are full of fresh new leaves. In the dim understory, the *F. affinis* have ripening seedpods already. In my opinion, *F. affinis* is one of the few plants equally attractive in bud, in blossom, and in seed. It has a long season along the trail, budding, blooming, and putting up pods early on the west side and much later in the high country. A few green berries are visible on the *A. manazanita*. Indian warrior *Pedicularis densiflora* lines the trail. The strap-like leaves of *Piperia* are more numerous in this year than last. I pass a kinglet sitting on her well-hidden nest of fresh green *Usnea*; one of her big black eyes follows my passage anxiously, but otherwise she is perfectly still.

Along the trail by Bald Hill, the Larkspur *D. patens* is profuse and eye-catching among the less conspicuous *Phacelia distans*, blue dicks, and Woodland stars *Lithophragma affine*. (After years of wondering, this year I learned that the small, brown, rounded leaves growing in the shaded mossy spots in January belong to this plant.) Up in the volcanic mudflows, the Cañon delphinium is very abundant and widespread, adding its aerial red-orange to the more down-to-earth *C. foliolosa* and the bright red *C. applegatei*. A pair of blue-gray gnatcatchers talk unself consciously between themselves; a wrentit flies quietly out of range, while the canyon wren is loud and melodious. The violet-green swallows are back and soar along the cliff faces. They join the ever-present ravens that swoop and dive in groups large and small, croaking and carrying on. Very social birds, the ravens inspect every crag and every traveler, leaving nothing unnoticed or unremarked.

The Gooseberry *Ribes californicum* that flowered during the January rains has some bristly spring berries, deep red, unripe but progressing. Lacepod *Thysanocarpus curvipes* decorates the trailside with its subtle pinks and greens. The first surprise is Jewelflower *Streptanthus glandulosus* right in the middle of the trail. The jewelflowers along the OHMT, seldom abundant, have the largest and most darkly purple blossoms I have ever seen in the genus. Their cousin *Arabis breweri* is already going to seed, its numerous long siliques sticking out from its long stem, quite a change from its humble pink flowers a month or so ago. Most of the buckbrush blossoms have faded but their spicy scent is still detectable in the sweet cool air. At Holm's Place, the apple trees are blossoming! The plum tree blossomed last month. I'm looking forward to the crisp, cool, wormy apples this fall.

Looking forward is a vital part of my approach to this place: seeing the

leaves makes me wonder what the flower will be like; seeing the flower makes me wonder what the seed pod will be like; and then, I wonder what new flower will be here next month, or next year. Similarly, every creekbed, hillside, and hilltop is a book unread that makes me wonder what I've not discovered yet.

Climbing into the highlands above the trail, passing through patches of *Nemophila menziesii atomaria* and *Madia nutans*, and the orange globes of budding onions, I find the seep where some Lady's tresses orchids *Spiranthes porrifolia* are growing. Late in the summer of 2000, when I first found this seep, only one stalk remained standing, its flowers toasted light brown but recognizably an orchid. But June 2, 2001, I saw the flowering spikes of ten plants and was able to identify them—up close, a column of cream-colored cherubs sticking out their tongues.

A few steps along and I'm stopped by a lush growth of *Sedum radiatum* on a mossy rock of black volcanic agglomerate. I saw these plants earlier in the year and they've grown, but still no blossoms. A little farther and I've arrived at the fremontia I found last year—there should be a few flowers and, yes, there is one fully open and a few others about to open. A small patch of yellow Broomrape *Orobanche sp.* hides at their bases.

I climb to the top of the ridge, about 700 feet above the trail. *Allium falcifolium* is sharing the 360-degree view with *Madia nutans* and *Fritallaria purdyi*. The *A. falcifolium* is almost as vividly colored as the more abundant *M. kelloggii*, but its location is a little puzzling. This is the only place I've found it off serpentine and, as with *F. purdyi*, this is an instance of a serpentine "endemic" doing well in the Sonoma Volcanics. A few miles away, on the northern section of the trail near the Corona Mine, *A. falcifolium* is blossoming in serpentine.

From this lofty spot, among all these beautiful flowers, I can see Mt. St. Helena, Snow Mountain (in the Mendocino National Forest), Blue Ridge (east of Lake Berryessa), Pope Valley, Mt. Diablo, the Napa Valley, and the Sonoma Mountains. I've seen the snowy Sierra from here, too, on clear winter days. Now and then I hear the clamor of young ravens echoing in the cliffs where they nest nearby. The unfamiliar noise alarmed me the first time I heard it; it is between yowling cats and something worse, amplified and redoubled by the cliffs and canyons.

Descending east from the ridge, I follow a creekbed I've not followed before. *E. helenae* flowers nod in the shade, and *Ribes californicum* and *malvaceum* (with a few berries ripening) are hidden there. On the edge of the brush, I find a small cluster of fremontia, but none blossoming. The water in the creek is clear and noisy; there are deep pools in the steep narrow gorge with white alder, willow, and Serviceberry *Amelanchier alnifolia*.

On the way back, I pass through a shady Madrone grove. The Chaparral lily

Lilium rubescens is just a few inches above the soil, but there are many more than last year. The deer will eat their share, but I think there will be a good show of seven- to-eight-foot lilies this summer, blooming profusely in the shadows of the madrones—something else to look forward to.

On the last day of April this year, I took a long, roundabout hike near the northern section of trail to find a spring I'd seen on the map. Of course, springs are attractive destinations: the promise of clean, clear, cold water bubbling out of the ground is a powerful draw, almost as powerful as the possibility of running into the benevolent guardian of the spring. Getting to the vicinity, I crossed through a serpentine area containing Kitten's ears *Calochortus tolmei*, spicebush in bud, Globe lily *Calochortus amabilis*, Napa lomatium *Lomatium repostum*, and Leather oak *Q. durata*. The lomatium is a rare endemic with blue-green leathery leaves, deeply lobed. The wings of its ripe seeds are white.

Although I've since found the spring, I didn't find it that day. I did find a patch of California barberry *Berberis pinnata*, the first and only I've seen in that country, some violets *V. purpurea* in flower, and a new patch of Chaparral lily. Toward the end of the hike, I was following a dry creekbed and stumbled across some *Mimulus angustatus* and *Scutellaria tuberosa* growing in the coarse sand. Both of these small plants (1–1.5 inches tall) are very charming. The mimulus is similar to *M. kelloggii* but has only a basal cluster of leaves, a very long thin throat, and dark spots on a whitish face where the former has two bright yellow streaks.

Moving Right Along

By May, Globe lilies *Calochortus amabilis* brighten every corner from the bottom of the trail to the top. They are literally everywhere, and bloom over a long period. They remind me of fremontia, not only because they bloom at about the same time and their flowers are bright yellow, but also because, as the blossoms age, they turn orange, just as the calces of fremontia turn orange. Of all the many flowers I've seen, none seems to me superior in modesty, dignity, and charm than the cheerful globe lily.

The Jewelflowers *S. glandulosus* are already in seed, while the uncommon Victor's gooseberry *Ribes victoris* is still flowering, its white blossoms with reflexed sepals hanging from each thickly leafed branch in the shadow of forest or brush. The *Ribes malvaceum* is looking a little bedraggled as its blue fruit forms among the rags of its formerly pink and strongly scented blossoms. I look upon this plant with gratitude. I can't forget how singular these blossoms were in the dark early months, fragrant, shapely, and colorful in the cold February overcast.

Figure 4. The rare endemic Cobb Mountain lupine *Lupinus sericatus* grows on white rhyolite tuff outcrops near the Oat Hill Mine Trail. Photo taken in Regional Parks Botanic Garden. The plant's broad, leathery, silver leaflets are strikingly attractive.

The Cobb Mountain lupine *L. sericatus*, which is found only in white rhyolite, is putting out long spikes of purplish flowers. In warmer, more protected spots they have bloomed already. The Green monardella *Monardella viridis viridis* is lifting its long stems into the sun to bloom later while the Coyote mint *Monardella villosa* is blooming now and smelling great. The rare and diminutive *Allophylum divaricatum,* with its long trumpet-like blue/red corollas, is barely visible in the shade of the manzanita.

The smell of the country changes with its flowers; the grasses ripening now, waving in the constant breeze—*Poa secunda*, *Nassela pulchra*, *Festuca idahoensis*, to name a few—will dry to a crisp brown and contribute the smell of baking bread later on. Now they add a fruity newness to the sun-warmed air. Small groups of blue Western larkspur *Delphinium hesperium* and a few solitary deep-blue Royal larkspur *D. variegatum* rise above the grasses and join the pink *Clarkia amoena* in a stubborn assertion of color. *Clarkia concinna* and *C. unguiculata* bring subtle and brilliant color to the shady edges of the woods.

The serpentine of the northern section has its own agenda. Not only does it vary from open scree to chaparral, but it also contains a greater variety of serpentinized rocks than I've seen before, including the silica-carbonate rock

mentioned above. In May the serpentine displays some of its diverse portfolio: the uncommon *Collomia diversifolia*, *Allium falcifolium*, the spiky buds of Green gentian *Swertia albicaulis*, Scarlet fritillary *Fritillaria recurva*, *Fritillaria affinis*, and *Erythronium helenae*.

By early June the serpentine on the northern section is also drying up, but the spicebush is flowering. All of the plentiful *E. helenae* are gone, their seedpods erect upon bare stalks, just as the green seedpods of the Scarlet fritillary cap the tops of their stout stems. The most striking flower at this time is a Green gentian *Swertia albicaulis*, an uncommon serpentine endemic. Its four whitish petals are intricately and delicately spotted blue. It was the spiky bud I had seen earlier. Another eye-catching flower is Flame butterweed *Senecio greenii* with orange blossoms and thick leaves that are purple underneath when young. *Silene californicum* also brightens up the chaparral with its bright red flowers. This silene stays close to the serpentine compared to the rangy silene in the volcanic chaparral. So different in habit, it could easily be seen as a distinct taxon. Jewelflower *S. morrisonii*, Buckwheats *E. luteolum* and *E. vimineum*, and Dwarf flax *Hesperolinon* species grow almost invisibly in the serpentine. While it's always a pleasure to find these serpentine endemics, it is a pleasure compounded to find them together.

In the pine woods above the Corona Mine is the rare endemic Pretty face *Triteleia lugens*, closely related to the Coast pretty face *T. ixioides*, from which it may be distinguished by the way the stamens attach to the corolla. It grows in open Douglas fir and sugar pine forests, shaded by these lofty trees but with plenty of headroom. In the little meadows nearby are the White hyacinths *Triteleia hyacinthina*. I had a good time photographing at least four different insects that were drinking nectar from the blossoms of these modest flowers, awkwardly balancing on their umbel-shaped inflorescence: several beetles and a Square-spotted blue butterfly *E. battoides* subspecies, a widespread but uncommon blue butterfly. A little to the east on a serpentine hilltop towers the Tall snapdragon *Antirrhinum virga.* This rare plant shares the breezy hilltop with bright yellow Bush poppy *Dendromecon rigida.*

The birds filled the treetops with their singing. As I stood watching lesser goldfinches dealing noisily with their youngsters that were perched unsteadily in an old fir, I listened to a blue-throated gray warbler that finally flew into view. A mountain quail, beautifully colored with chestnut throat and sides, strode ahead of me on the trail, chuckling to itself about something, its distinctive topknot straight up. In the fir forests I've seen and heard pileated woodpeckers and seen bank swallows at the Corona Mine.

The forest openings are full of the colorful sweeping flight of swallowtails and California sisters, our largest and most colorful butterflies. They aggressively inspect their territory, diving at any intruders, including hikers.

The Bear

One day in late May 2000, I found an abandoned foot trail that climbed a stony ridge through a scattering of chamise, Spineflower *Chorizanthe membranacea*, Sulphur flower *E. umbellatum bahiiforme*, and a bunch of exceptionally tall *M. kelloggii*. From the top, the trail dropped diagonally through a stand of Knobcone pine, ending on a small chaparral-covered hill. I looked for the trail to continue through the brush, but finding no sign of it, I tried every likely opening.

After finding what appeared to be a likely spot, I pushed along a couple hundred feet, the going getting more difficult as I went. Concentrating on the immediate mess I was in, I was startled by a commotion in a patch of the rare (in Napa County) MacNab cypress *Cupressus macnabiana* about fifty feet up from where I stood enmeshed in brush. As I waited for the commotion to materialize, I watched, amazed, as a large patch of cinnamon brown fur moved up and away from me, crashing at unthinkable speed through the impenetrable brush. Transfixed, I marveled as this disembodied rug careened over the crown of the hill, out of sight and into silence.

After a bit, my attention limped back to a familiar wide-eyed rootedness. I discovered a conclusion, fully formed, that I had apparently drawn during the preceding eventful seconds: I had disturbed a black bear who, out of consideration for my confounded fight-or-flight reflex, went the other way. Along with a new appreciation for the swiftness of bears, I now have a new awareness of the many private lives being lived in this unpopulated expanse of rough country, and the cost I impose on them by my intrusion.

Though I had intended to go forward, the lack of a path and the presence of a bear persuaded me to return the way I'd come . . . but I hadn't come all the way over here just to turn back. I had to look around a little. And sure enough, after a little while I found a few *Collinsia greenii*, a flower I'd never seen before. A small plant and hard to see among the chips of volcanic rock, its deep purple flowers were a pleasant surprise. This is yet another plant more commonly encountered in serpentine.

But that wasn't all. The next week I followed the same path to the same spot, this time making noise sufficient to alarm a dozen bears, apparently successfully. More fortunate this time, I found where the trail continued: right by the bear's launching pad of the previous week, but nothing stirred as I cautiously passed. A few steps beyond I saw the distinctive leaf of Napa fremontia *Fremontodendron californicum napense* sticking out of a patch of Stanford manzanita and MacNab cypress. It had no flowers, only dried calyces. A few yards further along, however, a fine fremontia stood free from the surrounding brush, some flowers fresh, bright, and yellow. Later in the year I found two more

stands of fremontia, not flowering, and in 2001 I found at least eight or nine more groups flowering beautifully in the rocky chaparral. The wand-like branches hold its tiny leaves aloft in a long arch. They are tan on the bottom, dark green on the top, and the blossoms set it all off beautifully. I've been told that fremontia can be found in small numbers southeast along the ridge as far as Mt. George. The several colonies of fremontia near the OHMT fill a distributional gap between the luxuriant serpentine fremontia at Knoxville and the sparse populations in Sonoma and Marin counties.[10] Clearly, Napa fremontia is a widely distributed but uncommon plant of the area. Why this distinctive shrub is considered a variety of *F. californicum* and not a separate species beats me. It is morphologically consistent throughout its range and various habitats. It is another example, like Purdy's fritillary, *Allium falcifolium*, and Mt. St. Helena fawn lily, of a serpentine "endemic" flourishing on Sonoma Volcanics.

Lilium Rubescens

One of the highlights of June is the flowering of the Chaparral lily *Lilium rubescens*. Of all the flowers in this landscape, none is more languid, relaxed, and impressive. They grow rapidly, reaching a length (but not a height) of six to ten feet, the whorls of leaves marking each foot along the stem. As their buds ripen and enlarge, their weight pulls the stem over. If they're lucky they come to rest against the smooth orange/green trunk of a madrone; if not, they may find themselves blooming in the dirt. However frustrating their long gestation may be, the blossoms fully merit the extravagant praise they receive. But they don't last very long; their white, spotted petals turn rose-colored and wither within a week or two. Just a couple of weeks later, green seedpods, resembling the buds, extend from the bent stems.

A Distinguished Visitor

John Thomas Howell, the well-known author of *Marin Flora*,[11] visited the area near the Oat Hill Mine Trail (OHMT) in mid-May 1940. He wrote a few short paragraphs about his visit in the Sierra Club Bulletin in 1941.[12]

He was clearly impressed with the landscape and the diversity of flowering

[10]See my "Napa Fremontia in Marin," *Four Seasons*, 1999.

[11]He succeeded Alice Eastwood as Curator of Botany at the California Academy of Sciences in 1953 and remained there until 1975.

[12]John Thomas Howell, "Much Ado About Botany," *Sierra Club Bulletin* (February 1941): 67–71.

plants. Like the locals, he called the "wild rugged area of rocky ridges, lava escarpments and gravely flats" Crater Country. His visit—the objective of which was to observe a disjunct population of *Mimulus cleistogamous*, "a botanical oddity, a strange dwarf monkey flower whose corolla is so reduced and tiny as to be almost microscopic"—was richly rewarded. Not only was he able to confirm the existence of this population, known then only from San Benito County,[13] he also found several other monkeyflowers and other small herbs that he counted among the more unusual plants of California. For example, he found *M. kelloggii*, *M. nasutus*, *M. layneae*, *Phacelia divaricata*, *Streptanthus glandulosus*, *Linanthus dichotomous* (and remarked on its anomalous day-flowering behavior), *Madia nutans*, *Calyptrideum quadripetalum*, and the very rare *Navarretia subuligera*.

His field notes indicate that *M. cleistogamous* is "more conspicuous in fruit when the [unreadable] calyx is striped with reddish purple lines that were the sharply carinate folds of the calyx in anthesis."[14] He was so impressed with the abundance of monkeyflowers that he called Crater Country an "El Dorado for monkey flowers." And he hadn't seen all of the species the area offers!

In a letter he wrote nearly thirty years later, Howell shed a little light on the origin of his magnum opus, *Marin Flora*. He wrote, "I always hoped for a return visit [to Crater Country] but during the gas-rationed years [of the 1940s] I turned my attention to 'pastures' nearer home—Marin County in particular—which resulted in the production of 'Marin Flora' in 1949."[15]

Howell's observations about Crater Country confirm my own. His summation of his 1940 visit anticipated my own by sixty years. He said with great simplicity and considerable understatement, "To those who see and understand, it is a place of beauty and interest."

The Sleepy Gray Fox

The OHMT gets pretty hot in early summer and, because the thin soil rests so lightly on rock, it gets dry early. It is nice to find a springy place tucked into a hillside, deep green with sedges, rushes, and shrubs. One seep I found was a mass of Snowberry bushes *Symphoricarpus albus*, layered with wild roses. The snowberry blossoms were small and pinkish white, the roses deep pink. Down among the grasses, I found a few diminutive *Epilobium congestum*, hardly visible but flowering a deep blue/red.

[13]Munz and Keck describe *M. cleistogamous* as a form of *M. douglasii*.

[14]Thanks to the California Academy of Sciences Botany Department for the excerpt from Howell's field notes.

[15]Private correspondence, used with permission.

Leaving there on no particular path, looking around as usual, I saw about twenty feet away a gray fox small as a cat, standing under a MacNab cypress, eyes half-closed, a little disheveled, looking over its shoulder at me, unwilling to flee but ready to if necessary. I suppose he'd been asleep in the nearby Coffeeberry *Rhamnus californica* thicket when he was alerted by my clumsy approach. Poor thing, all he wanted was shade and rest, and here I'd rousted him out. His face retained a slightly pained expression in response to my apology and offer of a bit of apple. He simply watched over his shoulder as I went on my way.

I follow creekbeds through all sorts of landscapes and usually find myself deep in the brush, unable to return the way I came, regretting the whole thing.[16] Creekbeds in late spring in the lava are dry. They pass through grasslands, over rock faces, under thickets, dry and in some places as flat as sidewalks. I followed one that came down the hills through thickets of poison oak, scrub oak, chamise, and manzanita, to hit flat open ground in a wide graceful sweep before entering an alder and fir forest. In the curve of its sweep was a meadow of Horsemint *Agastache urticifolia* six feet high and just beginning to bloom. These impressive plants, usually found in the Sierra or the Klamath Mountains, were mixed with cheerfully pink roses.

By the end of the second quarter, the Sulphur flower *Eriogonum umbellatum* has blossomed and turned orange; the single *Eriogonum compositum* I've found along the trail has gone to seed. The *Eriogonum vimineum* (or *luteolum*) is just beginning to bloom. Several of these wiry little plants in the talus below the trail make a faint haze of pink and green, another place for the Acmon blue butterflies to land and drink.

The Dog Rose

In 2001, I returned to the snowberry bushes. I arrived about a month earlier than the prior year; the snowberries weren't blossoming, nor were the pink roses flowering among them. But there were white roses in bloom, climbing over the end of the thicket. It was the purest white single rose, waving in the breeze, shining in the sunlight. But Jepson, Munz, Edwards, and Callizo, my experts in the area of sight-unseen taxonomy, all agree—it ain't native, no matter how pretty or appropriate. It's a Dog rose *Rosa canina*, "naturalized around old settlements," says Munz; "Native of Eurasia," says Jepson.

There are many non-native plants in the vicinity of the OHMT. Some are no-

[16]See Steve Edwards's "Bushwhacking Chamisal," *Manzanita* 5, no. 1 (Spring 2001), where he addresses the irresistible urge some people feel to get into the chaparral.

torious and disagreeable like the Yellow star thistle, Crane's bill, and so many more. Others are welcome, like the plums, apples, pears, and crabapples that Holm planted and which are artifacts of the historic use of the trail, as worthy of preservation as the rock walls and foundations he built. Most non-native plants are left over from early uses of the area around the trail: grazing, mining, and homesteading for over 100 years. I've found a number of domestic plants like periwinkle and iris way up in the highlands and on the northern section, where you can still see the overgrown gardens of the mining community. One place on Bateman Creek is thick with non-native berry bushes, cultivated by some enterprising guy to supplement the diet of the miners years ago, abandoned and gone wild. Ninebark and trillium grow among them.

In general, I can't help but remember that I'm non-native, too, and the trail itself is the work of non-natives. As I understand it, some of the Chinese laborers employed in the early Napa vineyards and the mercury mines built the OHMT. I'd consider Joe Callizo, born and raised in Pope Valley, a native; he's walked these hills for years. But he considers the Wappo people who formerly inhabited Pope Valley and Napa Valley the real natives. Although the Wappo probably didn't live in this rocky, dehydrated upland, they may have hunted up here now and then.

Third Quarter: July–September

The sun dries the meadows quickly. Few new flowers blossom. *Brodiaea elegans* and *B. californicum*, in blossom since May, seem to rise higher as the drying grass shrinks around them. In July, the *Penstemon heterophyllus* that has been growing more and more ostentatious flourishes brightly in the increasingly drab landscape. Its colorful, long-lasting blossoms will fade in a month or two, leaving the field to the few late bloomers. Although it has been blooming here and there for a while, *Keckiella breviflora* is more conspicuous now, its gangly branches tipped with clusters of white, candy-striped flowers that the bees seem to like. They stuff themselves so snugly into the bee-sized belly that they appear to be almost a part of the flower. *Keckiella lemmonii* is only now beginning to bloom in the shade along Bateman Creek. Its blossoms are smaller and less colorful than its cousin's, but its densely yellow-bearded staminode (hence the name "beardtongue"), visible through the open petals, more than compensates with its furry, twisted appearance. I've found only one patch of *Monardella viridis*; there must be more. It blooms now, light lavender on long stems. California fuchsia *Epilobium canum*, one of the plants that has grown more conspicuous over the previous months, announces its presence with large, red, trumpeting blossoms. The Rock daisy *Erigeron petrophilus*, its

gray-green stems and leaves growing through the spring and looking as though they will produce giant flowers, surprises me with its modest and beautifully nuanced reddish buds and yellow flowers. Similarly, Red penstemon *Keckiella corymbosa* begins to flower from the rock faces. I first noticed its preference for nearly solid rock several years ago and wondered about this hardy plant's ability to flourish. I've come to believe that the genius of this plant is finding a place safe from competition and predation by sinking its roots into the pathogen-free, tiny fractures of rock where winter rains can penetrate and be retained longer before going bone dry. In this respect it's like Sonoma penstemon *Penstemon newberryii sonomensis*. A note about *P. newberryii*: while it's common on Mt. St. Helena, and is found on the trail to Table Rock, it was not known on or near the OHMT until June 30, 2001, when I found it in seed on the craggy top of a small hill near the intersection of Bateman Creek and the OHMT. While the species is widespread and common in the Sierra and northern mountains, this variety extends south to Hood Mountain in the Sonoma Valley, and this hilltop is its easternmost range extension.

Another fine flower that comes out now is Rosinweed *Calycadenia truncata*. Its bright-yellow ray flowers last a couple of months and make the desiccated landscape almost young again. The delicate pinkish flowers of Bolander's knotweed *Polygonum bolanderi* are in bloom. This scraggly plant stays close to the ground most of the year and is almost invisible among last year's dried grasses and other debris. In April and May it fills out with small green leaves, like the leaves of chamise, but it's still hard to see. Even now, with its small blossoms, it doesn't catch the eye. The best way to find it is to follow the Acmon blue butterfly as it seeks the knotweed's nectar in this season of few choices. Serviceberries are beginning to ripen, some as big as the biggest blueberries.

Down on the southern section, just a mile or so from the trailhead, Bird's beak *Cordylanthus pilosus* finally appears. At the same time, *Cordylanthus tenuis* blooms in the serpentine of the northern section next to *Swertia albicaulis* in seed. On Mt. St. Helena, there is a good stand of *C. tenuis* (which is a larval food plant for the checkerspots I discussed earlier). Why does *C. tenuis* grow on volcanics on Mt. St. Helena when it's a serpentine endemic elsewhere? *Lessingia hololeuca*, an uncommon and inconspicuous plant, grows sparingly only on a short stretch of the central section of the OHMT. Its small, white disk flowers and tomentose leaves and stems can be overlooked easily.

The numbers and kinds of butterflies sharply drop at this time but, in addition to the California sisters and the several kinds of swallowtail that still patrol the forest clearings, a couple of new ones animate the heated air along the OHMT: *Satyrium tetra* and the Golden hairstreak *Habrodais gruneus*. Tetra stays around mountain mahogany, its food plant and favorite perch, which is beginning to form its extravagantly feathery seeds now. They are dark, fast-

flying butterflies and cryptically marked—a nice diversion to observe on a hot day. Gruneus, on the other hand, sits approachably on the leaves of *Q. chrysolepsis*, its food plant. Light brown with faint markings, it can be mistaken for a moth. The distribution of the subspecies is limited. (In 2001 *H. gruneus* was especially abundant. I stirred up a cloud of at least twenty of them on a recent hike.)

Another new and beautiful butterfly is the Silverspot (*Speyeria*). The genus is widespread in California. The species are generally local and distinctive but, as with some native plant species, the "splitters"[17] have multiplied the subspecies. The silverspot in the hills above the northern section of the OHMT (also at the top of Aetna Springs Road) is *Speyeria callippe liliana*. The males appear in June and for a couple of weeks they patrol the forest floor looking for females. When the females appear later, they seem to have no trouble finding company; then they, too, begin to fly low along the sun-spattered ground looking for violets (*V. lobata*, probably) upon which to deposit their eggs.

Speyeria callippe is probably best known for its nominate subspecies, *Speyeria callippe callippe* that lives atop San Bruno Mountain where its larvae eat *Viola pedunculata*. It was once widespread along the coast north and south of San Francisco, and on Twin Peaks in San Francisco, but it has been limited to San Bruno Mountain for many years.

Bateman Creek

The only riparian woodland on the OHMT, the shores of Bateman Creek are green year-round. The creek crosses the trail at about 1,900 feet just before it dives down a steep rocky gorge (500 feet in half a mile) to meet James Creek. Together they slide into Pope Creek, not far from where Schwartz Creek also merges with Pope Creek. (Pope Creek empties into Putah Creek, and finally the upland water flows into the Sacramento River.)

Crossing Bateman Creek from south to north on the OHMT is to pass suddenly from the sunny white ash flows and heat of the central section's chaparral to the shady fir forests that dominate the hills of the northern section. Bateman Creek rises in a spring in the hills to the east; its three seasonal tributaries drain a bowl-shaped area of rocky chaparral bordered by ridges of knobcone pine. The part of the creek immediately adjacent to the trail is forested with White alder *Alnus rhombifolia* and Douglas fir. Its banks sport Ninebark *Physocarpus capitatus*, Wakerobin *Trillium chloropetalum*, Victor's gooseberry *Ribes vic-*

[17] "Splitters" are those who prefer to recognize a separate species or subspecies for a population displaying distinctive characters. "Lumpers," their opposites, prefer to see these different populations as varieties of the species.

toris, and various ferns, sedges, and brambles. It's a lovely stream with quiet pools where in June the newts dangle from the surface tension and a few little trout rise.

This year I found three plants of particular interest along the creek: Musk monkeyflower *Mimulus moschatus*, Leopard lily *Lilium pardilinum*, and Rose campion *Lychnis coronaria*. White wooly annuals with solitary terminal crimson flowers, the rose campions look like brightly capped and velvet-clad courtiers conspiring in the crepuscular forest shades. All alliteration aside, lychnis has a lot going for it. Named by de Candolle, one of Europe's first botanists, "lychnis" means lamp. Paxton says lychnis is "an extremely beautiful genus of plants well meriting extensive cultivation for the brilliancy of their flowers."[18] A native of Italy, it was introduced to cultivation in England in 1596. The species on Bateman Creek is also commonly called dusty miller and mullein pink. I believe it came to the banks of Bateman Creek from a homestead at its headwaters, the only remaining evidence of which is a sad apple tree. The home must have had a garden in which the rose campion prospered and propagated.

But if lychnis is a lamp, what is *L. pardalinum*? Is it a lampshade because it hangs above the lychnis and reduces its brilliance by comparison? No. *L. pardalinum* is simply far more satisfying. While immoderately colorful by northern California standards, its colors, forms, textures, and structure are complexly provocative. In the presence of this noble plant, in its shady home with the glittering creek in the background and warblers, tanagers, and vireos lacing the air with drops and streaks of bright music, the imagination enjoys the incongruity of the lily's aerial delicacy and its robust, assertive structures.

In early July the *Ribes victoris* bears sizeable gooseberries in sizeable numbers. The glandular hairs perfume the picker's fingers with a sticky fragrance.

The Mountain Quail

The spirit of this place resides in many forms—the airy firs, the dark abrasive pinnacles, the cool springs. I believe the Mountain quail *Oreortyx pictus* embodies some of the many good spirits of this place. This is particularly evident when the adult quail lead their chicks through the woods and chaparral. I've unwittingly walked into these family groups more than once, and each time, no matter how alarmed the poor quail were, I've been suffused with a peculiar pleasure, related, I guess, to the care and comfort the adult quail give to their chicks.

The first time I blundered into a quail family, the chicks were tiny, mottled

[18]Paxton's *Botanical Dictionary* (London, 1868).

brown and white. As one of the adults feigned a broken wing and ran along the trail ahead of me, fluttering and crying, the chicks collected around my boots, cowering in the insteps, scrambling up the laces. They eventually scattered into the woods, bewildered but unharmed, and I left them knowing that the adults would herd the chicks back together to resume their foraging.

The next time I met a family of quail, the chicks were larger and were able to fly into the branches of the shrubs, to alight and stand on the limbs as immobile as mushrooms but quite visible. The calls from the parents seemed to convey two messages: "Hurry up and hide, but don't worry, we'll all get back together as soon as this creature has left us in peace." In any case and under all conditions, the quail are a welcome and warming sight on the northern section of the OHMT. (The California quail *Lophortyx californicus* is more common on the southern section.)

Fourth Quarter: October–December

This is a good time to cleanse the palate. The days are shorter and cooler. If the rains haven't started, the land is dehydrated. After the flood of color and form the OHMT has produced since January, it's a good time to look at the bones of this place. Its unmitigated rockiness, its severe contours, exposed by the absence of the soft grasses and distracting flowers, expresses the extremes of its origins.

A few Zauschneria flowers persist. Nearly all the berries are way past their prime: coffeeberry, chokecherry, gooseberry, Red coffeeberry *Rhamnus crocea*, and currants are all gone long ago—but the Toyon *Heteromeles arbutifolia* persists, and the large green berries of *A. stanfordiana* are ripening. Only a few small apples hang high in the bare trees at Holm's Place. The seedpods of *Keckiella breviflora* and *Penstemon heterophyllus* are brown and hard—both have a tiny curly "twig" at their tip, the remnant of their stigmas. Some leaves turn color. Big-leaf maple turns a particularly bright yellow, poison oak a deep red. The dogwoods turn a soft pink, as do the native grape leaves. The Oregon oaks are attractive, too, while the blue oaks unceremoniously drop their shriveled brown leaves. Signs of spring may be seen here and there. After the first rains the *A. manzanita* will bud and the *Castilleja foliolosa* leaf out. The scent of chaparral flowering currant may be detectable.

Conclusion

I'm writing this in the hills above the OHMT, in the middle of my second year hiking here. Sitting in the highlands overlooking Pope Valley baking in the sun I consider what Hume said about great pleasures; this is surely one of them. In

fact most of the time I've been on or near the OHMT has been at least pleasant, much of it very pleasant. Little compares with the pleasure of walking under a clear sky, caressed by warm air threaded with fresh breezes, observing the plants, insects, birds, and mammals earnestly pursuing their mysterious purposes.

In this essay I've tried to bind the rich and ever-shifting diversity of flowering plants into three-month periods, generally corresponding to the standard four seasons, but this is at best a rough ordering. I've experienced the nearly insensible shifting of one season into another, the prolonging of seasons on the north side of hills and in some valleys, and the truncation of seasons on hilltops. Each meadow, valley, hill, and forest in this complex environment possesses so many distinctive characters that each has its own bountiful seasons, some of which don't occur the same way each year. Moreover, I am mindful that this landscape is an artifact of an unimaginably violent past, the weathered remnants of which have been sprinkled with dirt, watered and disguised as a garden. The contrast of the rich diversity in this garden and the bed of desolation from which it rises is extremely provocative: just a place for a solitary hiker to ramble empty-headed in the intoxicating air, barely noticed by the all-observing ravens.

Partial Plant List for the Oat Hill Mine Trail and Vicinity

This list is a work in progress. It is not complete and omits many plants almost certain to be on or near the OHMT. It combines my own observations with unpublished lists developed by Joe Callizo (1991) and Gladys Smith (1974), and the short published list John Thomas Howell put together during his brief visit in 1941 (see text). When I have not personally observed or cannot confirm a plant they have listed, I have listed it here, and put their initials—JC, GS, JTH—in the "Remarks" column.

Scientific Name	Common Name	Family	Remarks
Acer macrophyllum	Big-leaf maple	Aceraceae	Common on southern section and Bateman Creek
Achillea millefolium	Yarrow	Asteraceae	Common
Adenostema fasciculatum	Chamise	Rosaceae	Fine and fragrant on upper southern section
Adiantum aleuticum	Five-finger fern	Pteridaceae	Found in one "cave" along central section
Adiantum jordanii	Maidenhair fern	Pteridaceae	Northern section on shaded trail cuts

Scientific Name	Common Name	Family	Remarks
Aesculus californica	Buckeye	Hippocastanaceae	Throughout but particularly southern
Agastache urticifolia	Horsemint	Lamiaceae	In meadow, Cup Valley; unusual this far south and for this elevation
Agrostis exarata		Poaceae	JTH
Allium amplectens	Narrow-leaf onion	Liliaceae	Common in meadows
Allium cratericola	Crater onion	Liliaceae	On volcanic gravel in central section
Allium falcifolium	Sickle-leaf onion	Liliaceae	On serpentine near northern section and on volcanics above Maple Spring
Allophyllum divaricatum		Polemoniaceae	Above Corona Mine; scattered elsewhere
Antirrhinum vexillo-calyculatum	Wire dragon	Scrophulariaceae	A few along the southern section
Antirrhinum virga	Tall snapdragon	Scrophulariaceae	Above Corona Mine; 6–7 ft. tall
Arceuthobium occidentale	Foothill dwarf mistletoe	Viscaceae	On Gray Pine
Arctostaphylos canescens		Ericaceae	Central section near Aetna Springs Road
Arctostaphylos manzanita	Common manzanita	Ericaceae	Southern section, common
Arctostaphylos stanfordiana	Stanford manzanita	Ericaceae	Dominant species on central section along trail and ridges above
Arctostaphylos viscida		Ericaceae	Northern section on serpentine
Avena fatua	Wild oat	Poaceae	Common southern and central
Baccharis pilularis consanguinea	Coyote brush	Asreraceae	Common and widespread
Barbarea orthoceras		Brassicaceae	Dry streambeds
Berberis aquifolium	Oregon grape	Berberidaceae	GS
Berberis pinnata		Berberidaceae	In Bateman Creek bed
Brassica campestris		Brassicaceae	GS
Brassica nigra		Brassicaceae	GS
Briza maxima	Rattlesnake grass	Poaceae	
Briza minor		Poaceae	
Brodiaea californica leptandra		Liliaceae	In meadows, central and northern sections
Brodiaea elegans		Liliaceae	
Bromus carinatus	California brome	Poaceae	Acc. S. W. Edwards
Bromus hordeaceus	Soft chess	Poaceae	
Bromus rubens	Red brome	Poaceae	
Bromus tectorum		Poaceae	
Calandrinia ciliata menziesii		Portulacaceae	
Calochortus amabilis	Fairy lantern	Liliaceae	Common along all sections of the OHMT
Calochortus luteus	Gold nuggets	Liliaceae	Only along upper north section
Calochortus tolmei	Pussy ears	Liliaceae	On northern section
Calycadenia sp.		Asteraceae	Northern section
Calycadenia truncata	Rosin weed	Asteraceae	Common on central section
Calycanthus occidentalis	Spicebush	Calycanthaceae	Near Holm's Place and on northern section
Calyptridium quadripetalum		Portulacaceae	JTH
Calystegia collina collina	Mt. St. Helena morning glory	Convolvulaceae	Serpentine endemic; on northern section road-cuts

Scientific Name	Common Name	Family	Remarks
Calystegia purpurata		Convolvulaceae	JC
Cardamine californica cardiophylla	Milkmaids; toothwort	Brassicaceae	Early spring on southern section
Carex spp.		Cyperaceae	
Castilleja applegatei martinii		Scrophulariaceae	Flowers early on upper southern section
Castilleja attenuata	Valley tassels	Scrophulariaceae	In meadows, central section
Castilleja densiflora		Scrophulariaceae	GS
Castilleja foliolosa	Felt paintbrush	Scrophulariaceae	Flowers nearly year-round
Ceanothus confusus	Rincon ceanothus	Rhamnaceae	Hills above northern section, serpentine
Ceanothus cuneatus	Buckbrush	Rhamnaceae	Main constituent of southern chaparral
Ceanothus foliosus	Wavy-leaf ceanothus	Rhamnaceae	First to colonize openings in woods, central and northern
Ceanothus incanus	Coast whitethorn	Rhamnaceae	Off trail, central section
Ceanothus integerrimus	Deerbrush	Rhamnaceae	Here and there, central section
Ceanothus jepsonii albiflorus	Musk brush	Rhamnaceae	Northern serpentine
Ceanothus parryi	Parry's ceanothus	Rhamnaceae	Here and there, central, off trail
Ceanothus prostratus occidentalis	Mahala mat	Rhamnaceae	Frequent in hills above Corona Mine
Centaurea melitensis	Napa thistle; tocalate	Asteraceae	Very infrequent, upper southern section
Centaurea solstitialis	Yellow star thistle	Asteraceae	Found most places along central and southern sections but seldom dense
Cercocarpus betuloides	Mountain mahagony	Rosaceae	Common and widespread
Chamomilla matricaria	Pineapple weed	Asteraceae	Alien
Chloragalum pomeridianum	Soap plant	Liliaceae	
Chorizanthe membranacea	Spineflower	Polygonaceae	Occasional on central section
Clarkia concinna	Red ribbons	Onagraceae	Scattered on central and southern sections
Clarkia gracilis		Onagraceae	Central section, here and there
Clarkia purpurea quadrivulnera		Onagraceae	Central section, in meadows
Clarkia unguiculata		Onagraceae	Central section, here and there
Claytonia exigua		Portulacaeae	Hills above central section
Claytonia parviflora		Portulacaeae	Hills above central section
Claytonia perfoliata	Miner's lettuce	Portulacaeae	Hills above central section
Clematis lasiantha	Virgin's bower	Ranunculaceae	Not common
Collinsia greenei		Scrophulariaceae	Only one place, upper Palisades
Collinsia heterophylla	Chinese houses	Scrophulariaceae	Here and there
Collinsia sparsiflora arvensis		Scrophulariaceae	Not uncommon, southern trail-side
Collinsia tinctoria	Sticky Chinese houses	Scrophulariaceae	Not common, southern section
Collomia diversifolia	Serpentine collomia	Polemoniaceae	Scarce; in northern section on serpentine
Corallorhiza maculata	Spotted coralroot	Orchidaceae	GS
Cordylanthus pilosus	Bird's beak	Scrophulariaceae	On lower southern section; mid-summer
Cordylanthus tenuis brunneus	Serpentine bird's beak	Scrophulariaceae	On volcanics and serpentine
Cornus nuttallii	Mountain dogwood	Cornaceae	Hills above Corona Mine; infrequent
Crassula connata	Pygmy weed	Crassulaceae	
Crataegus douglasii	Hawthorn	Rosaceae	GS

Scientific Name	Common Name	Family	Remarks
Crataegus sp.	Hawthorn (exotic)	Rosaceae	Near headwaters of Bateman Creek
Cryptantha flaccida		Boraginaceae	JC
Cryptantha torreyana		Boraginaceae	JC
Cupressus macnabiana	MacNab's cypress	Cupressaceae	On volcanics
Cupressus sargentii	Sargent's cypress	Cupressaceae	On serpentine
Cuscuta occidentalis	Western dodder	Cuscutaceae	
Cynoglossum grande	Hound's tongue	Boraginaceae	Southern trail-side, early bloomer
Cynosurus echinatus	Dogtail	Poaceae	All too common
Cyperus sp.	Nut sedge	Cyperaceae	Seeps, central section
Cytisus scoparius	Scotch broom	Fabaceae	
Danthonia californica	California oatgrass	Poaceae	Widespread throughout
Datisca glomerata	Durango root	Datiscaceae	
Daucus carota			JC
Delphinium hesperium	Western larkspur	Ranunculaceae	Along trail a little north of Holm's Place
Delphinium nudicaule	Scarlet larkspur	Ranunculaceae	Widespread and spectacular
Delphinium patens		Ranunculaceae	Along trail, flanks of Bald Hill
Delphinium variegatum	Royal larkspur	Ranunculaceae	A few along trail in central section
Dendromecon rigida	Bush poppy	Papaveraceae	Above Corona Mine
Dichelostemma capitatum	Blue dicks	Liliaceae	Common and widespread
Dichelostemma volubile		Liliaceae	
Dodecatheon hendersonii	Shooting star	Primulaceae	Early bloomer, southern and elsewhere
Draba verna	Whitlow grass	Brassicaceae	GS
Dryopteris arguta	Wood fern	Dryopteridaceae	JC
Dudleya cymosa	Live-forever	Crassulaceae	Common all sections
Epilobium canum	Zauschneria	Onagraceae	Common in mid-late-summer
Epilobium densiflorum		Onagraceae	Uncommon; in seeps and near Bateman Creek
Epilobium minutum	Small-flowered willow herb	Onagraceae	GS
Eremocarpus setigerus	Dove weed	Euphorbiaceae	
Erigeron petrophyllus	Rock daisy	Asteraceae	Among dark lava formations, central
Eriodictyon californicum	Yerba Santa	Hydrophyllaceae	Widespread
Eriogonum compositum		Polygonaceae	One location, central section of trail
Eriogonum luteolum		Polygonaceae	Northern section on serpentine
Eriogonum nudum	Naked buckwheat	Polygonaceae	
Eriogonum umbellatum bahiiforme	Sulphur flower	Polygonaceae	Common in central section
Eriogonum vimineum	Wickerstem buckwheat	Polygonaceae	
Eriophyllum lanatum arachnoideum	Wooly sunflower	Asteraceae	All sections
Erodium botrys	Large-flowered filaree	Geraniaceae	
Erodium cicutarium	Red-stemmed filaree	Geraniaceae	
Erythronium helenae	Mt. St. Helena fawn lily	Liliaceae	Occasional on volcanics along central section; on serpentine in northern
Eschscholzia californica	California poppy	Papaveraceae	
Eschscholzia lobbii	Lobb's poppy	Papaveraceae	Upper southern section

Scientific Name	Common Name	Family	Remarks
Festuca californica	California fescue	Poaceae	In openings and edges of light forest
Festuca idahoensis	Blue bunchgrass	Poaceae	Off trail, central section
Filago californica	Herba Impia	Asteraceae	JC
Fragaria vesca	Woodland strawberry	Rosaceae	JC
Fraxinus dipetala	Foothill ash	Oleaceae (Olive)	A nice specimen close to fawn lilies
Fremontodendron californicum napense	Flannel bush	Sterculiaceae (Cacao)	Widespread but not common in vicinity; none right on trail
Fritillaria affinis	Checker lily	Liliaceae	Common throughout
Fritillaria purdyi	Purdy's fritillary	Liliaceae	Top of southern section near Holm's; central section in volcanic flats
Fritillaria recurva	Scarlet fritillary	Liliaceae	Northern section
Galium andrewsii	Phlox-leaved bedstraw	Rubiaceae	GS
Galium aparine	Goosegrass	Rubiaceae	JC
Galium nuttalii	San Diego bedstraw	Rubiaceae	GS
Galium triflorum		Rubiaceae	GS
Garrya congdonii	Silk tassel	Garryaceae	On serpentine in northern section
Geranium dissectum		Geraniaceae	JC
Geranium molle		Geraniaceae	JC
Gilia capitata	Ball head gilia	Polemoniaceae	Inconspicuous in spring meadows
Gilia tricolor	Bird's eye gilia	Polemoniaceae	Bald Hill
Gnapalium canescens		Asteraceae	Not many; all sections
Grindelia camporum	Gumplant	Asteraceae	Along upper northern section
Helianthella californica		Asteraceae	Clearings in lightly forested
Hemizonia fitchii	Spikeweed	Asteraceae	Late bloomer, central section vicinity
Hesperolinon spergulinum	Dwarf flax	Linaceae	Northern section on serpentine
Hesperoncnide tenella	Western nettle	Urticaceae	GS
Heteromeles arbutifolia	Toyon; Christmas berry	Rosaceae	
Heuchera micrantha	Alum root	Saxifragaceae	In shade central and northern sections
Hieracium albiflorum	Hawkweed	Asteraceae	JC
Hoita macrostachya	Leather root	Fabaceae	Bateman Creek
Holodiscus discolor	Creambush	Rosaceae	Common
Horkelia sp.		Rosaceae	
Hypericum anagalloides	Tinker's penny	Hypericaceae	
Hypericum concinnum	Gold wire	Hypericaceae	
Hypochaeris glabra	Smooth cat's ear	Asteraceae	GS
Iris longipetala		Iridaceae	GS
Iris macrosiphon	Ground iris	Iridaceae	JC
Juncus sp.		Juncaceae	
Keckiella breviflora	Small-flowered beardtongue	Scrophulariaceae	Scraggly plant on central and northern sections, usually near creeks
Keckiella corymbosa		Scrophulariaceae	Fall blooming; central section
Keckiella lemmonii		Scrophulariaceae	At junction of OHMT and Bateman Creek; infrequent elsewhere; blooms late

Scientific Name	Common Name	Family	Remarks
Lactuca serriola	Prickly lettuce	Asteraceae	Central section near seeps
Lamarckia aurea	Goldentop	Poaceae	JC alien
Lasthenia californica	Goldfields	Asteraceae	
Lathyrus nevadensis		Fabaceae	JC
Lathyrus vestitus		Fabaceae	JC
Lathyrus vestitus ochropetalus		Fabaceae	JC
Layia gaillardioides	Tidy tips	Asteraceae	JC
Layia platyglossa	Tidy tips	Asteraceae	GS
Lepechinia calycina	Pitcher sage	Lamiaceae	In chaparral, central and northern
Lessingia hololeuca		Asteraceae	One population along central section
Lewisia rediviva	Bitterroot	Portulacaceae	From Palisades through central section, on bare volcanic flats; white-flowered
Lilium pardalinum	Leopard lily	Liliaceae	Along Bateman Creek
Lilium rubescens	Chaparral lily	Liliaceae	In lightly shaded madrone forests
Linanthus androsaceus		Polemoniaceae	
Linanthus ciliatus	Whisker brush	Polemoniaceae	Spring meadows, central section
Linanthus dichotomus meridianus	Evening snow	Polemoniaceae	This subspecies flowers during the day
Lithocarpus densiflorus	Tanoak	Fagaceae	Widespread throughout
Lithophragma affine	Woodland star	Saxifragaceae	Meadows, central section
Lomatium repostum	Napa lomatium	Apiaceae	One colony on northern section
Lonicera interrupta		Caprifoliaceae	Occasional
Lotus crassifolius		Fabaceae	Uncommon, central, woods and meadows
Lupinus albifrons	Silver lupine	Fabaceae	Common, southern section
Lupinus nanus		Fabaceae	Common, central section, meadows
Lupinus sericatus	Cobb Mt. lupine	Fabaceae	Several colonies in vicinity
Lychnis coronis	Rose campion	Caryophyllaceae	Alien but lovely along Bateman Creek
Madia elegans		Asteraceae	
Madia elegans vernalis		Asteraceae	Sunny meadows
Madia nutans	Nodding madia	Asteraceae	Widespread and common along the central section of trail
Malus baccata	Crab apple	Rosaceae	Found around old homesteads
Malus sylvestris	Apple	Rosaceae	Around old homesteads; delicious
Marah fabaceus	Manroot	Cucurbitaceae	
Medicago polymorpha	California bur clover	Fabaceae	GS
Micropus californicus	Slender cottonweed	Asteraceae	GS
Microseris douglasii	Small chicory	Asteraceae	GS
Mimulus angustatus		Scrophulariaceae	In dry tributary of Bateman Creek
Mimulus auranticus		Scrophulariaceae	Common along southern section
Mimulus "bracteatus"		Scrophulariaceae	The population above the Corona Mine has features of *M. layneae* and *M. bracteatus*
Mimulus cardinalis	Scarlet monkeyflower	Scrophulariaceae	Around seeps in mid-summer; not common
Mimulus cleistogamous		Scrophulariaceae	JTH
Mimulus guttatus		Scrophulariaceae	Common along upper stretches of southern section

Scientific Name	Common Name	Family	Remarks
Mimulus kelloggii		Scrophulariaceae	Common in spring and early summer in central section
Mimulus layneae		Scrophulariaceae	JTH
Mimulus moschatus	Musk monkeyflower	Scrophulariaceae	Bateman Creek
Mimulus nasutus		Scrophulariaceae	
Mimulus pilosus		Scrophulariaceae	Dry streambed near Aetna Springs Road
Minuartia douglasii		Caryophyllaceae	Spring
Monardella villosa	Coyote mint	Lamiaceae	
Monardella viridis viridis	Green monardella	Lamiaceae	Above Corona Mine; one population on trail, central section
Navarretia divaricata vividior	Mountain navarretia	Polemoniaceae	Near *M. viridis* on central
Navarretia subuligera	Awl-leaved navarretia	Polemoniaceae	JTH
Nemophila heterophylla	Canyon white eyes	Hydrophyllaceae	In spring on hillsides, central section
Nemophila menziesii	Baby blue eyes	Hydrophyllaceae	In spring on hillsides, central section
Nemophila menziesii atomaria	Striped white eyes	Hydrophyllaceae	In spring on hillsides, central section
Oenothera ovata	Suncup	Onagraceae	GS
Orobanche sp. (yellow)		Orobanchaceae	
Orobanche uniflora	Broomrape	Orobanchaceae	GS
Orthoceras verna		Brassicaceae	
Parvisedum pumilum		Crassulaceae	Rocky outcrops in meadows, central section
Pedicularis densiflora	Lousewort; Indian warrior	Scrophulariaceae	Woods along southern section
Pellaea andromedaefolia	Coffee fern	Pteridaceae	
Pellaea mucronata	Bird's foot fern	Pteridaceae	
Penstemon heterophyllus		Scrophulariaceae	All sections; lovely, in-your-face blue
Penstemon newberryi sonomensis	Mountain pride	Scrophulariaceae	Only one colony on hill near intersection of Bateman Creek and the trail
Pentagramma triangularis	Goldback fern	Pteridaceae	
Perideridea kelloggii	Yampah	Apiaceae	JC
Phacelia distans		Hydrophyllaceae	Common springtime trail-side flower
Phacelia divaricata		Hydrophyllaceae	In spring meadows with *M. kelloggii*
Phacelia imbricata		Hydrophyllaceae	Rosettes lovely year-round
Phacelia ramosissima		Hydrophyllaceae	JC
Phorodendron densum	Dense mistletoe	Viscaceae	On MacNab cypress
Phorodendron villosum	Oak mistletoe	Viscaceae	On oak
Physocarpus capitata	Ninebark	Rosaceae	Along streams and in seeps
Pickeringia montana	Chaparral pea	Fabaceae	
Pinus attenuata	Knobcone pine	Pinaceae	On ridges throughout
Pinus lambertiana	Sugar pine	Pinaceae	In hills of the northern section
Pinus sabiniana	Gray pine	Pinaceae	Common throughout
Piperia elegans		Orchidaceae	In woods along southern section
Plagiobothrys nothofulvus	Popcorn flower	Boraginaceae	
Plantago erecta	Dwarf plantain	Plantaginaceae	
Plantago lanceolata		Plantaginaceae	

Scientific Name	Common Name	Family	Remarks
Plectritis macrocera	White-flowered plectritis	Valerianaceae	Here and there in the central section
Poa secunda	Pine bluegrass	Poaceae	
Polycarpon tetraphyllum	Four-leaved allseed	Caryophyllaceae	JC
Polygonum bolanderi		Polygonaceae	Common in central section
Polygonum parryi		Polygonaceae	JTH
Polypodium californicum		Pteridaceae	JC
Polypodium glycyrrhiza	Licorice fern	Pteridaceae	GS
Potentilla glandulosa	Upland cinquefoil	Rosaceae	JC
Prunus domestica	Plum	Rosaceae	Around old homesteads, Holm's Place
Prunus emarginata	Bittercherry	Rosaceae	JC
Prunus ilicifolia	Islay	Rosaceae	GS
Prunus virginiana demissa	Chokecherry	Rosaceae	One or two plants, near central section
Pseudotsuga menziesii	Douglas fir	Pinaceae	
Psilocarphus capitatus		Asteraceae	GS
Pyrola picta	Leafless wintergreen	Pyrolaceae	Woods above Corona Mine
Pyrus communis	Pear	Rosaceae	Around old homesteads
Quercus agrifolia	Coast live oak	Fagaceae	All sections
Quercus berberidifolia	Scrub oak	Fagaceae	Mostly in central section
Quercus chrysolepsis	Maul oak	Fagaceae	Mostly in central section
Quercus douglasii	Blue oak	Fagaceae	All sections
Quercus durata	Leather oak	Fagaceae	Northern section serpentine
Quercus kelloggii	Oregon oak	Fagaceae	All sections, but more in northern section
Quercus lobata	Valley oak; roble	Fagaceae	All sections
Quercus wislizenii	Interior live oak	Fagaceae	All sections
Ranunculus californicus	Buttercup	Ranunculaceae	
Ranunculus occidentalis	Buttercup	Ranunculaceae	
Raphanus sativus	Wild radish	Brassicaceae	
Rhamnus californica	Coffeeberry	Rhamnaceae	
Rhamnus crocea	Red berry	Rhamnaceae	Upper southern and central sections
Rhododendron occidentale	Western azalea	Ericaceae	Bateman Creek
Rhus trilobata	Lemonade berry	Anacardiaceae	One nice specimen at Holm's Place
Ribes californicum		Grossulariaceae	Upper southern section
Ribes malvaceum	Chaparral currant	Grossulariaceae	Scattered along central section
Ribes roezlii cruentum	Sierra gooseberry	Grossulariaceae	Along Aetna Springs Road
Ribes victoris		Grossulariaceae	Mostly off trail, central section
Rosa canina		Rosaceae	Alien; on spot near central section
Rosa gymnocarpa	Wood rose	Rosaceae	
Rubus sp.		Rosaceae	Along Bateman Creek
Rumex angiocarpus		Polygonaceae	JC
Rupertia physodes	Scurf pea	Fabaceae	Bateman Creek and Maple Spring
Salix lasiolepis	Arroyo willow	Salicaceae	Here and there, all sections
Salvia columbariae	Chia	Lamiaceae	Mainly central section
Sambucus mexicana	Blue elderberry	Caprifoliaceae	Northern section
Sanicula arctopoides	Footsteps-of-spring	Apiaceae	Common
Sanicula bipinnatifida	Purple sanicle	Apiaceae	Common
Sanicula crassicaulis	Gambel weed	Apiaceae	JC
Saxifraga californica		Saxifragaceae	Wet areas, all sections
Scandix pectin-veneris	Shepherd's needle	Apiaceae	GS

Scientific Name	Common Name	Family	Remarks
Scribneria bolanderi		Poaceae	JTH
Scrophularia californica	California bee plant	Scropulariaceae	A few plants, upper southern section
Scutellaria californica		Lamiaceae	On trail, upper southern section
Scutellaria tuberosa	Skullcap	Lamiaceae	Dry creekbed, northern section
Sedum radiatum	Narrow-leaf stonecrop	Crassulaceae	Central section
Sedum spathulifolium	Pacific stonecrop	Crassulaceae	Common
Selaginella wallacei	Spike moss	Selaginelaceae	JC
Silene californica	Indian pink	Caryophyllaceae	On serpentine and volcanics; not common
Silene gallica		Caryophyllaceae	JC
Sisymbrium altissimun	Tumble mustard	Brassicaceae	JC
Sisyrinchium bellum	Blue-eyed grass	Iridaceae	
Solanum umbelliferum		Solanaceae	
Solanum xantii		Solanaceae	JC
Soncus asper	Prickly sow thistle	Asteraceae	JC
Spergula arvensis	Starwort	Caryophyllaceae	Alien
Spiranthes porrifolia	Ladies' tresses	Orchidaceae	One seep near Maple Spring
Stachys adjugoides		Lamiaceae	Seeps
Streptanthus glandulosus	Jewelflower	Brassicaceae	Scattered on upper southern and central
Streptanthus morrisonii		Brassicaceae	Above Corona Mine in serpentine
Swertia albicaulis	Green gentian	Gentianaceae	Serpentine of the northern section
Symphorocarpus albus laevigatus	Snowberry	Caprifoliaceae	Seeps, central section
Thalictrum fendleri polycarpum	Meadow rue	Ranunculaceae	Near moisture, central
Thysanocarpus curvipes	Fringepod	Brassicaceae	JC
Torreya californica	California nutmeg	Taxaceae	Widespread, southern and northern
Toxicodendron diversilobum	Poison oak	Anacardiaceae	
Trichostema lanceolatum	Vinegar weed	Lamiaceae	Above Corona Mine
Trifolium ciliolatum		Fabaceae	JC
Trifolium depauperatum amplectens		Fabaceae	GS
Trifolium repens		Fabaceae	GS
Trifolium tridentatum	Tomcat clover	Fabaceae	
Trifolium variegatum		Fabaceae	GS
Trillium chloropetalum	Wake robin	Liliaceae	Near Bateman Creek; not common
Triphysaria eriantha	Johnny Tuck	Scrophulariaceae	GS
Triphysaria pusilla		Scrophulariaceae	GS
Triteleia hyacinthina	White brodiaea	Liliaceae	Meadow near Corona Mine
Triteleia laxa			
Triteleia lugens		Liliaceae	Abundant in woods near Corona Mine; a few near trail in the vicinity of the "cave"
Umbellularia californica	Bay laurel	Lauraceae	
Urtica holosericea	Hoary nettle	Urticaceae	GS
Vicia sativa	Common vetch	Fabaceae	JC
Vicia villosa varia		Fabaceae	JC
Vinca major	Greater periwinkle	Apocyaceae	Alien; near old homesteads
Viola lobata	Pine violet	Violaceae	In woods, northern section

Scientific Name	Common Name	Family	Remarks
Viola purpurea quercetorum		Violaceae	In clearing, northern section
Vitus californica		Vitaceae	Scattered here and there; thin but tasty
Vulpia microstachys		Poaceae	Central and northern rocky meadows
Wyethia angustifolia	Narrow-leaved mule ears	Asteraceae	
Wyethia glabra		Asteraceae	
Zigadenus fremontii		Liliaceae	Common, central section meadows
Zigadenus micranthus		Liliaceae	Central section meadows

Acknowledgments

The author thanks Joe Callizo for his enthusiastic help identifying plants, providing leads to their location, and sharing his rich accumulation of historical and botanical knowledge of the area; John Livermore for his generous interest in my project, his friendly willingness to share his privileged view of the history of the place, providing firsthand accounts of his early days on the history-rich land, explaining old and new geological and topographical maps as well as historic photographs, and sharing his geological insights; and Steve Edwards, as ever, for many, many things over the years but especially his patience with my seemingly intractable ignorance of basic botany and the consequently persistent questions. Thanks to the Holt-Atherton Special Collections, University of the Pacific Library, for the historic photograph of the Oat Hill Mine Trail.