



A Gardener's Primer on California Native Lilies *by Ben Anderson*



Bart O'Brien



After a day of driving through the beautiful wilderness of coastal Northern California, we had finally begun the long ascent up to Onion Mountain. I was cautiously driving up a steep and winding road, with Bart and Joe ogling plants while I did my best to keep my eyes on the road. This was my first trip with Bart O'Brien and Joe Dahl, Regional Parks Botanic Garden director and then-supervisor, and I was starting to get nervous. It was about to get really, really dark and really, really cold, and I had no idea if there was going to be anywhere to set up a tent along this narrow, climbing road surrounded by thick forest. At this point, I had completely abandoned the botanizing and I was trying not to panic as I drove faster, surveying the darkness for any sign of a turnout. While I was used to working long hours on collecting trips with my previous employer, I was getting a little anxious about how my new boss was going to approach this situation.

That's when Bart looked at me and said, "Turn on the brights and let's go really slow so we don't miss anything."

I wasn't left with any time to brood over the implications of this decision, because that is when the lilies made their dramatic appearance. I was overwhelmed with a sense of wonder as the roadcut was lit up with white and pink torches. Before long a handful of lilies became dozens, and soon they were everywhere. It was the exciting beginning of a trip filled with many, many lilies.

Seeing lilies in habitat and growing lilies has become a passion, maybe even an affliction, of mine. My goal here is to lay down a foundation for anyone interested in growing these fantastic plants. While some are difficult to grow and best enjoyed in habitat, there are several native lilies that respond well to life in cultivation and can be readily incorporated into our gardens.

Washington lily (*Lilium washingtonianum*) on the road up to Onion Mountain.

Bolander's lily (*Lilium bolanderi*) growing in the Botanic Garden.

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Coast lily (*Lilium maritimum*). Bart O'Brien

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The true lilies—genus *Lilium*—are widespread throughout the northern hemisphere, with over 100 species. They are herbaceous plants that grow from bulbs (technically “bulb-like, scaly rhizomes,” as the *Jepson Manual* calls them). The underground rosette of fleshy scales is a beauty itself. The plants have erect stems with generally whorled, elliptical leaves. The bell- or funnel-shaped flowers, sometimes fragrant, have six colorful tepals (the three petals and three sepals together make up the showy flowers). Depending on species and age and vigor, there may be few to dozens of flowers per stem.

California is home to some stunning lilies, many of which occur only within the California Floristic Province. Lilies, like many other types of plants here, have come to occupy a number of niche habitats thanks to our evolutionary playground of diverse topography, soils, and precipitation regimes. One can find lilies growing in a wide range of situations, from fog-drenched coastal bogs, to riparian areas or seeps with perennially running water, to rocky chaparral, and even high up in the mountains where they sleep under heavy winter snow.

As a big fan of summer-dry landscapes, I am particularly fascinated by the dry-growing lilies that are unique to this part of the world. If, like me, you spend a lot of time gawking at “belly flowers” which can require a hand lens to appreciate, our lilies may seem like alien creatures with their lush green growth and towering stalks of huge, showy flowers. You couldn’t possibly grow something like that alongside buckwheats and sages and oaks, could you? That’s where things start to get interesting. From summer-dry to moisture-loving lilies, many—but not all—of our native species can be coaxed into cultivation in Bay Area gardens.

Cultural Considerations

Before we delve into “wet and dry” categorizations and species-specific information on native lilies, let’s look at some basic challenges that can be applied to all lilies in a garden setting.

Deer will eat lilies. It happens in the wild and it happens in gardens. Rodents can also be an issue. Gophers are very capable of eating lily bulbs, but in my experience, lilies are more likely to suffer disturbance from tunnel construction itself rather than herbivory. Moles, voles, and gophers all move around

in the soil and can cause damage when they create huge air pockets around and below bulbs, or inadvertently push bulbs out of the ground. Underground wire cages can be very helpful, but take care that they are not circum-excavated and pushed out of the ground.

Lilies can get viruses, which are transmitted via sucking insects, so insect control is important; aphids in particular are a common problem.



Healthy new spring growth pushing from lily bulbs with some scales exhibiting rot.

Look for mottled or streaked leaves and/or distorted, weakened growth. As a rule, any virused material should be destroyed, but since viruses are not passed through seeds, allowing virused plants to go to seed and then regrowing the plant from seed is an effective way to soften your losses. Buying bulbs from reputable sources and growing from seed both reduce your chances of running into a virus issue.

Lilies are also temperamental to fungal issues, and this is probably the biggest general hurdle with the more finicky species. Good airflow around plants, excellent soil drainage, and cool root temperatures are all important in keeping fungi and other pathogens at bay. Ever notice that lilies seem to love roadcuts? Think about it: sunlight access, airflow, exceptional drainage



Leopard lily (*Lilium pardalinum* ssp. *pardalinum*).



Lilium pardalinum var. *giganteum* in a pot at RPBG.

above what often becomes a water channel: all the pieces are there! In the garden, we can cater to the more finicky lilies by putting them in pots or mounds or planters or otherwise customized planting beds using well-draining mixes. Regular repotting, particularly with the hard-to-grow species, is essential. Bulbs often move downward in the pot and are prone to rot if they reach the bottom. Repot lilies when they are “dormant” (lilies never go completely dormant). Be careful about repotting just as they are pushing fragile new growth in late winter. Wayne Roderick grew many native lilies and wrote, “If grown in containers, they must be repotted every year or two, as the soil mix breaks down and will become waterlogged, which is sure death to bulbs.”

Wet, dry, easy, hard

Our native lily species hail from a diverse array of soils, elevations, and moisture regimes, and each responds differently to life in cultivation. It is important to look at their individual requirements in order to be successful. Several are perfect for anyone new

to lilies or gardening in general, while others provide substantial challenges for the most frenzied of geophyte fanatics.

Wet growers: the leopard lily complex and others

Let’s look at a selection of native taxa, starting with the wet-growing leopard lily complex.

The leopard lily (*Lilium pardalinum* ssp. *pardalinum*), a particularly beautiful lily with an interesting two-tone pattern of red and orange-yellow, is arguably the easiest native lily to grow and is the most widely available commercially. It grows all over the state in areas that are wet in winter and often wet long into summer, so it can be grown in a conventional watered garden. It has decent clay tolerance, and I have had success growing both coastal and Sierran forms in our local soils. This is a good lily to try if you water regularly, but established colonies can get by on occasional summer water, depending on location and microclimate. One of my favorite features is that it expands clonally underground, and so can be divided and moved to new areas. The leopard lily complex has been a

popular parent in hybrids, going back to the days of Luther Burbank, and it continues to be a popular choice as a way to get good garden tolerance and clonal growth into crosses.

Much like the leopard lily but larger in every respect is *Lilium pardalinum* var. *giganteum*. This lily has been around in one form or another for a long time and has gone by many names, including ‘Red Giant’, ‘Sunset’, Chinook lily, ‘Giganteum’, and *L. harrisianum*. This is not one but several lilies, sometimes going under the same names. Some material is cited as originating from wild stock along the Van Duzen River in Humboldt County, while other material is reportedly of hybrid origin (*L. pardalinum* x *humboldtii*) dating back to Luther Burbank’s experiments with hybridization. And it gets more complicated! Turns out the stock that the Regional Parks Botanic Garden has been growing and propagating under the name *Lilium pardalinum* var. *giganteum* or ‘Giganteum’ since 2004 is of a third origin, near Placerville. Regardless of origin, these lilies are known for being very growable, with some summer moisture, and are capable of expanding underground like their leopard lily cousins. Maybe one day when we all have hand-held gene-sequencing capabilities on our phones we can get this properly sorted out.

Another variation on the leopard lily is the Pitkin lily (*Lilium pardalinum* ssp. *pitkinense*), hailing from Pitkin Marsh in Sonoma County. Jepson calls it “barely distinct” from *L. pardalinum* ssp. *pardalinum*; however, the Pitkin lily has notably variable morphology and is unusually variable from seed. I have grown this lily in several areas for years and have seen it proliferate even in fairly heavy East Bay clay. Our patch at the Botanic Garden contains two distinct forms: one looks very much like the regular leopard lily, and the other has very nice, nearly all-red tepals. Because of its ease of cultivation, this is one of the more available lilies.

There are two other leopard lily subspecies I want to mention that are less commonly seen but may lend themselves to summer-watered gardens. Wiggins’ lily (*Lilium pardalinum* ssp. *wigginsii*), from northwestern California and southwestern Oregon, has uniformly yellowy-orange petals. A portion of the stamens are curiously and distinctly “malformed or shrunken” per Jepson. This beauty has been growing in a rocky wall for years at the Regional Parks Botanic Garden,



Pitkin lily (*Lilium pardalinum* ssp. *pitkinense*) growing in the ground at RPBG.



Wiggins’ lily (*Lilium pardalinum* ssp. *wigginsii*) growing in the ground at RPBG.

although annual rodent tunneling has slowly dwindled it down to just a couple of bulbs. I salvaged damaged bulbs and scales into pots this winter and plan to outplant into cages at some point. Shasta lily (*Lilium pardalinum* ssp. *shastense*) is native to wet areas of moderate-elevation coniferous forests in northern California and southwest Oregon. The Botanic Garden has a vigorous example in the ground in the Sierran section of the garden, near the Wiggins’ lilies. I have heard that this taxon isn’t always the easiest to grow, so we may have a nice clone here.



Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) growing in the ground at RPBG.

Moving on from the leopard lily ensemble, let's look at the alpine lily, or Sierran tiger lily (*Lilium parvum*), which is a California endemic of moderate to high elevations in the Sierra Nevada. Note that growing conditions at high elevation are dramatically different than in the Bay Area, with life under snow in winter and a short, wet, cool growing season. Lilies and many other plants from high elevation areas can be very tricky to grow in the Bay Area. The spotted, funnel-shaped flowers of the alpine lily show variation across the species range. There is a popular pink-flowered selection called 'Halliday' from lower elevations that is reportedly more growable.

Sometimes called a wet grower and sometimes called a dry grower, the coast lily (*Lilium maritimum*) is a delicate beauty from coastal northern California. I have seen this called "summer-dry" but I have also seen it growing in very boggy meadows right by the ocean in areas with seriously cool, foggy summers. I have had it limp along in pots and in the ground but not perform. This is one to appreciate in nature!

Dry growers: how dry is dry?

Summer-dry lilies—that sounds appealing, doesn't it? Well, one can spend a lot of time vexing over the exact moisture requirements of a summer dry lily. Lilies aren't like onions and brodiaeas and mariposas that lose all roots and shoots and safely hide in a papery coat for months at a time during the dry season. All lilies have persistent, fleshy roots that require *some* amount of moisture in the soil. A number of summer-dry lilies are from higher elevations or areas with more summer fog and fog-drip and generally cooler summer temperatures than we have in the East Bay. Cooler summers keep the ground from drying out as fast and probably mean fewer fungal issues. Also, most of these species are from areas where the overall precipitation is higher and the rainfall period is longer than ours. Additionally, the summer dry lilies are generally from very well-drained soils, not the hard clay that many of us are used to here in the East Bay. So, while there are summer-dry lilies that have proven adaptable to our local gardens, the term hides a lot of complexity.

While the summer-dry native lilies are generally difficult, the ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) is a fantastic exception. Have you been to the Regional Parks Botanic Garden in June or July and found yourself walking under the towering strings of lilies that show up in much of the Southern California section? It is quite a sight! If you look closely at ground level, you'll see that these lilies don't clonally expand out the way that leopard lilies do. So where did they all come from? If you look more closely at the flowers, you can see that there are subtle differences in the form and colors and spottiness of each inflorescence, indicating that these were seedlings. These amazing plants have naturalized by seed and/or bulblet over a broad distance from their original planting site—a testament to their growability!

I have grown the Humboldt lily for a number of years in containers and in the ground in several locations around the Bay. It has been easy and rewarding and I don't know why it is not happening more extensively. This is another lily that tolerates some clay. Experimenting with dry-season handling, I have kept them totally dry in containers in my shed and on the north side of my house, and I have also tried giving them occasional summer water in containers and in the ground. In all cases they did not suffer

detrimental effects. Isn't it nice when your most treasured plants are flexible with their watering needs? What you *do* want to avoid are extremes. Prolonged *very* hot and dry conditions will be overly desiccating to bulbs not insulated by lots of soil, for example, bulbs overheating in small black plastic containers in the summer sun or bulbs devoid of soil and exposed to wind. Avoid the combination of very wet and very hot for extended periods, which is a good general rule with any established drought-tolerant-type native plantings because it encourages a suite of fungal issues that these plants have not had to deal with in the wild for millennia.

The northern counterpart is *Lilium humboldtii* ssp. *humboldtii*, which looks similar but behaves quite differently in cultivation. It is known for being finicky, and I have killed this plant under conditions that did not kill its southern counterpart. I don't see any good reason to grow this since we have such a growable southern form!

Another vigorous lily flourishing in the ground at the Botanic Garden is the Columbia lily (*Lilium columbianum*). It is native to California and up into the Pacific Northwest, where it grows at lower elevations, including coastal areas. The squat, bell-shaped flowers are orangey-yellow. While it can tolerate some dryness in late summer and fall, it is generally native to areas that get some summer fog and have significantly more precipitation than the San Francisco Bay area. As such, it generally prefers some summer moisture. At the Botanic Garden, it does well on two sites that are steep slopes where the roots are shaded but the shoots can grow into sun. They get occasional summer irrigation.

The remaining summer-dry lilies are captivating subjects and it may be tempting to try to plug them into a summer-dry garden, but they are not readily grown in cultivation. Don't let me stop you from trying, but the lack of commercial availability is your first big clue to how finicky they are. I include them here because I know I'm not the only one who appreciates the challenge of growing new and difficult things. The siren song of the summer-dry lilies has gotten ahold of me.

Bolander's lily (*Lilium bolanderi*) is a strict serpentine endemic from northwestern California and southwest Oregon, where it grows in chaparral and coniferous forest alongside a number of other frustratingly hard-to-grow plants. It is a charming lily with glaucous (bluish) foliage and reddish-pink, often spotted flowers.



Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) growing in the ground at RPBG.



Columbia lily (*Lilium columbianum*) growing in the ground at RPBG.

Many have fallen for this bulb's charm but failed to grow it successfully. This bulb probably requires exceptional drainage and prefers a somewhat cooler summer than we can give it here in the East Bay. Although I have one in a very gravelly mound in full sun that is going on two years in the ground, this species does not generally persist well. I don't think this plant will ever make it into regular cultivation, but it has been used in crosses, and I hope to one day source (or hybridize) a growable lookalike of this charmer. Enjoy it where it thrives—in habitat!

Kellogg's lily (*Lilium kelloggii*) is a notably fragrant lily, often but not always found on serpentine in a geographical footprint similar to *Lilium bolanderi*. It has very striking pendant, pinkish, bell-shaped flowers with a yellow midrib. You may have seen this one flowering in container culture and in the ground at the Regional Parks Botanic Garden. This is another lily that has been used in crosses for its unique color and fragrance. Despite my allergy to this particular shade of pink, I really enjoyed finding this flowering by the hundreds on a desolate, charred ridge among as many manzanita skeletons.



Kellogg's lily (*Lilium kelloggii*) growing in the ground at RPBG.

Washington lily (*Lilium washingtonianum*) is big, beautiful, fragrant, and something to appreciate in nature. It has generally resisted attempts to rein it into garden settings, although Joe Dahl successfully grew and flowered it in a mound of expanded shale near the front entrance for several years, where it was tucked behind a rock and out of sprinkler range. It hails from rocky, coniferous forest at moderate elevations that are cold in winter and dry in summer. *Lilium washingtonianum* was named for Martha Washington by Albert Kellogg (of the Cal Academy in San Francisco) in 1863. Older works sometimes refer to this species as the “Lady Washington Lily” or the “Martha Washington Lily.”

Redwood lily (*Lilium rubescens*) resembles the Washington lily but is smaller and grows into lower elevations in the North Coast Ranges. This beauty with notably upturned flowers is another summer-dry lily that has grown and persisted but not thrived in recent history at the Botanic Garden.

Commercial availability

I hope that at this point you are inspired to accept the challenge of growing some of these charmers. So, where does one get native lilies? Commercial availability of lilies is generally reflective of growability, with some of the easiest to grow being more widely available at local nurseries and botanic gardens. The Regional Parks Botanic Garden propagates several of the better garden subjects and occasionally releases others. While the internet can be a good place to purchase seed, take caution, because some internet-based vendors sell seeds that aren't what they say they are. I have fallen into this trap before! What is not available locally is often available through specialist groups focused on lilies or bulbs in general, which also offer a fantastic place to learn more about lilies. These groups often have members all over the world, and you might be very surprised to find out where people are successfully growing California native lilies and hybrids.

DIY Propagation

When it comes to expanding or backing up your collection, you have several methods of propagation at your disposal. Leopard lilies and anything with leopard lily parentage will expand underground over time, and entire bulbs may be dug and moved or potted. This is best done in the “dormant” season, but beware that when they begin to push new shoots in late winter or early spring, the new shoots can be extremely fragile



Lily scales showing the formation of new bulblets.

When one considers the amount of seeds and scales produced by lilies, a lily-crazed gardener can very quickly run out of space. Good communication may be essential in terms of yard- or patio-space allocation in order to avoid domestic disputes. Growing lilies leads to nursery trips and field trips, which circles back to growing more lilies, which leads to sharing lilies and collecting more lilies; and in the final stages of lily-madness, the afflicted may write articles for botanic garden publications, further disseminating the affliction. Jokes aside, if you love native plants and spectacular flower displays, you must try growing some of our native lilies. And for the not-so-growable ones, take a trip and pay your respects—there is nothing quite like seeing these spectacular creatures in habitat. Remember, you can

and breakable. Lily shoots that are broken at any stage may not push growth again until the next season.

Scales may fall off of bulbs during this process, or may be manually removed in fall or winter and can be used to generate new clones. Be aware that scales contribute to the overall resources of a bulb, so pulling too many off can set your bulbs back. The basal plate, where the scale is attached at the bottom of the bulb, is capable of generating entirely new bulblets when separated from the main bulb. Scales may be planted, partially exposed in a well-drained medium, and kept moist. Another method is to layer scales in vermiculite in a moist baggy. The bulblet forms off the base of the scale as the energy of the scale is pushed downwards to create a new plant. Healthy bulbs are white. Soft brown tissue, particularly at the basal plate, is rot. It is worth salvaging scales from rotting bulbs, applying fungicide, and then following the above procedure to attempt to save the plant.

Plant your seeds at the right time of year, water them in, keep them moist, and in a couple weeks leaves start showing up. That's how it works with a lot of plants but not with lilies! Our western North American lilies undergo cool hypogeal germination, which means that the seeds germinate in cool or cold weather and spend a few months creating a bulblet and roots before finally growing leaves as the weather warms up. Growing from seed is an exercise in planning and patience! Note that this is different from how other lilies from other parts of the world germinate; also note that seed-grown plants are not clones and may look different from the parents. I have had lilies flower in as little as three years from seed.

always slow down and use your brights to make the most of your lily-based adventures! 🌱

Ben Anderson is the Botanic Garden's Shasta-Klamath and Valley-Foothill gardener. He holds a B.S. in Horticulture from the University of California, Davis. When not gardening at work or gardening at home, Ben enjoys hiking and exploring the natural world.

All photos by the author except as indicated.



A crowded pot of lily seedlings in desperate need of attention at the author's home.

Hybrids: From Luther Burbank to DIY by Ben Anderson

Imagine being able to create custom lilies by selecting and combining different traits—adding a desirable fragrance to red flowers, for example, or crossing the glaucous foliage of Bolander’s lily (*Lilium bolanderi*) with the upright flowers of the redwood lily (*L. rubescens*). Imagine adding hybrid vigor to the already wonderful traits of the native species. Nature is doing a remarkable job on its own without any human assistance, but just think of the staggering range of possibilities when you start crossing things!

There is a rich and ongoing history of successful hybrid lily creation by both amateurs and professionals, going back to the late 1800s when Luther Burbank had hundreds of thousands of hybrid native lilies growing in the North Bay. (What a sight that must have been! It has been said that you could smell them from five miles away.) Amateur hybridizers have continued to build off of old hybrids and create their own from species. But have you ever seen a native hybrid-lily at a nursery? I was involved in growing and brokering plants in California’s nursery industry for a number of years and don’t remember ever seeing one on any availability list.

So, what happened to Burbank’s hybrids and their genetic lines? While Burbank sold extensively to wholesalers and did some retail of his own, little or no material survives. See, Burbank had a fast turnaround time; he was often selling hybrid seedlings in big lots before he knew what they looked like and before they had names. He also wasn’t known for his record-keeping abilities, and his work predated plant patents. Many crosses were probably lost to viruses, which tend to accumulate in clonal material over time and probably played a big role in the eventual demise of most plants. Burbank did a lot of bulb trading with other collectors and wholesalers, which I would speculate didn’t help him avoid viruses. And, much of his native lily stock was being shipped to non-West Coast areas, to people used to growing more tried-and-true, garden-friendly types of lilies in climates that could be hot, humid, and wet in summer.

There continue to be amateur hybridizers creating material all over the world, but that material seems to circulate amongst a frenzied few. I wonder if that will change over time or if hybrid lilies will always remain a specialist’s endeavor. I myself am working on collecting and hybridizing and hope to release new—and most importantly—garden-friendly lilies through the Regional Parks Botanic Garden in the future.

Anyone can try hybridizing. Lilies have big, accessible flower parts, and all native lilies are cross-compatible.

Lily plants are generally self-sterile, so the pollen from the anthers of one flower must be dabbed onto the stigma of the flower of another plant. The stigma is receptive when it is sticky; there are a number of tricks you can do to ensure that you are the fertilizer and not a bee or hummingbird with undesirable pollen.

Hybrids can be created, but hybrids also just happen. In the wild, hybrids show up where species overlap and occasionally create confusing “hybrid swarms.” In gardens, where closely related species tend to be massed in close proximity, accidental hybrids tend to pop up. This happens with genera like *Ceanothus* and *Arctostaphylos* and *Dudleya*, and it can happen with lilies too. At the Botanic Garden there is a vigorous, tightly clumping lily growing in our Southern California section that exhibits traits intermediate to the leopard lily and Humboldt lily. It has been there for years, growing in full sun with roots shaded by a rock wall. We are currently propagating this attractive accidental cross for future sales. 🌿

Spontaneous hybrid growing in the Southern California Section at RPBG.



The Lemon Lily—A Rare Beauty *by Maggie Ingalls*

Lemon lily, also known as Parry's lily (*Lilium parryi*), is a rare lily in many ways. In addition to being our only yellow lily, it is Arizona's only native lily. It has an unusual disjunct distribution, growing in wet sedge meadows in the mountains of Southern California, Arizona, and far northern Sonora, Mexico, but not in Baja. This lily is not shaped like most of California's lilies, which are Turk's-cap lilies; it resembles the Washington lily (*L. washingtonianum*) in its large size and long trumpet-shaped flowers. Like the Washington lily, the lemon lily is also strongly fragrant.

Parry's was never a common lily but is now much rarer due to over 100 years of flower picking and bulb collection. In his 1902 *Botanical Survey of the San Jacintos*, Harvey Monroe Hall wrote: "It was only a few years ago that the showy blossoms were frequently met with along all the streams and bogs from nearly the lower edge of the Transition Zone up to an altitude of 9000 feet, thus reaching into the lower part of the Canadian Zone. While it is now by no means rare, still it is found in profusion only on the more remote parts of the mountain. That this is due entirely to the diligence of the bulb hunters is difficult to believe, and yet one party took over 5000 bulbs in a single season." Other reasons for the population decline of this stunning lily include logging, grazing, mining, water diversion, erosion, and sedimentation.

Passionate lemon lily devotees in the San Jacinto region have gone so far as to create the Idyllwild Lemon Lily Festival, now called Lemon Lily Restoration Day, held in late June or early July. Funds raised are used to support restoration efforts. To further cheer you up, the Botanic Garden has nine lemon lilies growing in pots, almost big enough to flower. 🌿

By Maggie Ingalls, with thanks to Dave Stith and Tom Chester for their lily lore:

http://tchester.org/sj/species/lilium_parryi/index.html



Keir Morse

Parry's lily (*Lilium parryi*)

A Useful Resource

For a useful resource, check out the North American Lily Society at www.lilies.org. As described in the website, the society's Quarterly Bulletin publishes articles on *Lilium* species, culture, propagation, hybridization, and growing lilies from seed. NALS members have access to a seed exchange and a lending library. And like-minded enthusiasts from all over North America and even farther afield gather at the annual meetings to learn from the experts and admire beautiful lilies.

Lilies: A Personal Quest by Joseph 'JoeJoe' Clark

To say that I love lilies is an understatement. From the moment they break through the earth in late winter or early spring to their aging inflorescence in late fall, I constantly trip, stumble, and fall head over heels for our native *Lilium* species. My love for the Western American lilies started many years ago while I was working in

west Sonoma County as a naturalist. One of my co-workers gifted me a worn-out copy of a field guide of native flora of the redwood region. On the back of the book was a stunning image of a leopard lily (*Lilium pardalinum*) that captured my heart. From that moment, I have dedicated my life to the preservation, protection and cultivation of California's true native lilies. If there were unlimited space in this publication, I would describe each species represented in California: its merits and challenges in the garden and in my life. However, I will narrow down my observations to only a couple of species.

Probably the most recognizable to many hikers, admirers, and home gardeners is

the stately leopard lily (*Lilium pardalinum* ssp. *pardalinum*). The species is considered a "wetland" lily, as it is found along streambanks, rivers, and lakes. My first encounter with the leopard lily was along a gorgeous creek in Marin County, where it was accompanied by the western lady fern (*Athyrium filix-femina* var. *cyclosorum*); carex species; Oregon white oak (*Quercus garryana*); and, towering above the lilies, Douglas fir (*Pseudotsuga menziesii*). After that sacred moment, I was determined to grow leopard lilies in my garden, and eventually

found out that *Lilium pardalinum* ssp. *pardalinum* is the easiest and hardiest in the garden of the Western American species. The leopard lily or *pardalinum* complex has proven to be adaptable in many soil situations, ranging from alkaline to acid to serpentine substrate, and it enjoys a considerably long lifespan.

In addition to its strength and endurance, the true glory of the pardalinum complex is its diversity. Manifold in color, size, and stature, all subspecies and varieties of the leopard lily hold true to the Turk's-cap flower shape: the Pitkin Marsh lily (*Lilium pardalinum* ssp. *pitkinense*); the Shasta lily (*Lilium pardalinum* ssp. *shastense*); Vollmer's lily (*Lilium pardalinum* ssp. *vollmeri*); Wiggins' lily (*Lilium pardalinum* ssp. *wigginsii*); and, last but not least, *Lilium pardalinum* 'Giganteum', a mesmerizing character reaching up to seven or eight feet tall and carrying up to ten or more orange to red hand-sized flowers. Formerly known as *L. harrisianum*, the variety is said to have originated along the Van Duzen River (while some believe it to be a creation of Luther Burbank). In my experience cultivating *L. pardalinum* 'Giganteum' I have had great success by paying attention to three essential keystones: drainage, air circulation, and light. It requires all three!

A shining jewel in the North Coast part of the state is Kellogg's lily (*Lilium kelloggii*). A pendant Turk's-cap, its color ranges from ivory white to light pink with a median streak of yellow into the throat, and with splashes of pink spots aging to a magenta hue. Along with its celestial appearance it carries a sweet, natural fragrance. Kellogg's is a "dryland" lily growing on rocky soil or on the edge of the forest away from perennial moisture. Though receiving plenty of moisture in the winter and spring, it detests consistent moisture during its flowering season in the summer until its withering period in the fall. In cultivation, this species has been a challenge to master, but it's the pride and joy of those who have succeeded. Many summers ago, I had an opportunity to observe this beautiful creature along a forest road with the Columbia tiger lily (*Lilium columbianum*), the redwood lily (*Lilium rubescens*), the Cascade lily (*Lilium washingtonianum* ssp. *purpurascens*), and hybrids of the *Lilium pardalinum* complex. I loved its



JoeJoe with purple-flowered Washington lily (*Lilium washingtonianum* ssp. *purpurascens*).



Leopard lily (*Lilium pardalinum* ssp. *pardalinum*).

beautiful recurved tepals and how it glowed in its glory even alongside the forest road. It helped me understand, even further, the critical role that proper drainage and sun exposure play in the survival of this species.

Probably one of the most cherished native lilies in my journey is the redwood lily (*Lilium rubescens*). It grows naturally in redwood forests amongst yellow pines, and in chaparral landscapes. “Rubescens” refers to the blushing, becoming red of the flower as it ages from white with purple spots to wine-red or purple. Boasting an unforgettable fragrance, this “dryland” lily achieves eight to ten feet of height if conditions are favorable (especially after a fire) and is five to six feet tall in average conditions. It can be adorned by as many as forty flowers on a single stalk. Its native range is from Sonoma County to Del Norte County, extending inland as far as Napa and Lake counties. As with many “dryland” lilies, the redwood lily has strict requirements that many an enthusiastic gardener has failed to achieve on the first, second, or even third attempt. In its native range, high levels of precipitation in winter and spring are followed by a very long dry period from its flowering season in summer to late fall. During the summer months the moisture of the fog and the precise depth of the bulbs play a vital part in its insulation from

the dry, warm air that would cause it to shrivel. These conditions make it daunting to recreate in a container or home setting, even for the well-versed gardener. However, those who are blessed to live in the right lily habitat, such as the forest, have a good chance of success. The redwood lily can be a focal point of any garden, just as it is in nature. In my life, the redwood lily is a symbol that reflects beauty and hardship gracefully combined into one.

California’s native lilies have a magical and sacred place in my heart—a gateway into an understanding of life’s challenges alongside the reward of passionate diligence. My passion for native *Lilium* is truly what drives me. As a Black man, my passion for lilies could be construed as “out of the usual,” but I hope to inspire anyone reading this article not to be intimidated either by society or by the difficulty of growing certain native plants. Growing them has grown me. 🌿

Joseph ‘JoeJoe’ Clark lives in Calistoga and works as a Park Steward Aide and Naturalist for Napa Open Space District, and as a Restoration Technician for the Sonoma Ecology Center. He enjoys botanizing the Mayacamas and Howell mountain ranges when he’s off work. His many photographs of lilies and other natural history subjects can be followed on his popular Instagram feed, lilyboyjoy. His love of lilies was the subject of “Consider the Lilies,” an NPR Cultivating Place podcast aired on January 3, 2020.



Redwood lily (*Lilium rubescens*).

A Gift for the Garden *by Rosie Andrews*

Bob Case



Ed Rustvold alongside the Sierran-section bulb bed in 2017.

The Botanic Garden community suffered a great loss with the unexpected death of Ed Rustvold on December 1, 2020. Ed was a regular presence at Wayne Roderick lectures for many years, usually seated in the back rows, “one of the gang, by which I mean the group of treasured curmudgeons originally centered around Wayne Roderick, then around Ted Kipping,” according to former Botanic Garden Director Steve Edwards. A recognized bulb expert and collector with a special interest in the genus *Calochortus*, he regularly corresponded with many experts in the bulb business and academia. Ed is remembered as gregarious and considerate, and as an enthusiastic, keenly-observant, and knowledgeable companion on botanizing field trips. His travels included many trips to the Mojave, and over the years a number of Botanic Garden community members and staff accompanied him on these forays. As longtime Garden supporter and travel

companion Bob Case shared, “He was simply a real human being, a delight to know and travel with, and he had a great love for the Garden and his friends and family.”

Over the past twenty years, the raised bulb beds in the Garden—two by the Glass House and one outside Juniper Lodge in the Sierran section—benefited at different times from Ed’s loving care and attention. Working as a volunteer, most recently alongside Interpretive Student Aide Kiamara Ludwig, he weeded, planted, and parented the beds, using bulbs and annual seeds from his personal collection. As Steve Edwards explained: “When we made the two new bulb beds back by the greenhouse, it was my plan from the start to give one of them to him. His bulbs (and annuals) in that bed were a fantastic complement to our own collections in the adjacent bed.”

This complementary approach to management of the bulb beds has been a long-term success story, and during the first half of the year, they are always worthy of a visit, frequently showcasing rare plants—bulbs and small annuals—that shouldn’t be missed. During one week this March, nine species of fritillaria (*Fritillaria affinis*, *affinis* var. *tristulis*, *agrestis*, *biflora*, *eastwoodiae*, *liliacea*, *ojaiensis*, *pluriflora*, and *purdyi*) bloomed in unison in the beds. Diminutive annual monkeyflowers (*Diplacus kelloggii*, *douglasii*, and *pictus*) carpeted the sunny beds, while tender shoots of various alliums and brodiaeas poked through the soil. The shadier beds hosted miniature claytonias and microscopic buttercups, shaded by two rare species of budding larkspur—*Delphinium bakerii* and *luteum*; emerging green and brown mottled leaves of erythroniums gave a hint of what was soon to follow. This small-scale botanical spectacle lasts well into July, when Tiburon jewel flower (*Streptanthus niger*), thorn mint (*Acanthomintha lanceolata*), prostrate farewell-to-spring (*Clarkia prostrata*), and a variety of *Calochortus* species help draw the bulb-bed season to a close with their unforgettable blooms.

After Ed’s passing in December, Garden Director Bart O’Brien learned he had gifted his entire collection to the Botanic Garden. His home nursery on the slopes of his North Berkeley backyard was filled with pots—hundreds of them—in which he expressed his passion for growing and comparing geophytes,

with species from around the globe, including thousands of seed-grown bulbs from all over California, Nevada, and Oregon. His extensive collection of *Calochortus* section *Cyclobothra* alone comprises 15 to 20 massive, thick-rimmed 15-gallon clay pots. Over the past two months, work has begun on relocating the collection to the Botanic Garden—no small task, but a welcome one, given the exquisite nature of its contents and Ed’s long-term commitment to the Garden.

How best to do justice to this remarkable gift? More dry bulb beds! Raised bulb beds provide many benefits, protecting bulbs, annuals, and their seeds from gophers, voles, and other pests, while allowing for good soil control, drainage, and management of watering to duplicate the summer dry conditions needed to prevent rot. The beds’ larger thermal mass makes them less susceptible to heat than smaller containers and, for the benefit of us humans, raised beds bring species that generally must be appreciated on hands and knees closer to eye level, for easier viewing.

With all this in mind, plans are now underway to build additional summer-dry bulb beds throughout the Garden, allowing the display of bulbs and annuals in Garden sections that correspond to their common locales within California. Only the Cape area of South Africa has a greater diversity of native bulb species, and this project will greatly enhance the Garden’s ability to showcase this aspect of the richness of California flora. Financial support from the Friends will play a big role in bringing this project to fruition, and hopefully work can begin once the pressure of the pandemic and other concerns eases.

The Botanic Garden is very grateful to Ed for his friendship and dedication over the years and his contribution to knowledge about California’s native bulbs. We are humbled by the generous donation of his incredible collection. The last issue of *Manzanita* in 2020 noted that for the first time the Garden had flowered the relatively newly described species *Calochortus rustvoldii*, named in honor of Ed, who had first collected it post-bloom in 2005 and later suspected it might be new to science. We are grateful that Garden visitors will be able to enjoy *C. rustvoldii* and many other unique species for generations to come because of Ed’s lasting generosity. 🌱

Rosie Andrews has been a volunteer at the Regional Parks Botanic Garden since completing the docent training program in 2009.



Rosie Andrews photos

Fritillaria liliacea



Fritillaria pluriflora



Fritillaria biflora

Fritillarias in the bulb beds.

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The Garden is open to visitors by free online reservation only,

on Saturday, Sunday, Tuesday, and Thursday. But check our website, as we hope to be fully open by July.

In any case, we hope you can visit the Botanic Garden soon.

The Garden's FREE e-newsletter, newly named *The Botanic Garden Monthly*, is a terrific source of information about the Garden—its plants, features, and natural history—and about Friends classes and events. Please consider subscribing!

To sign up for classes, make reservations, subscribe to the e-newsletter, and more, visit the Garden's website at www.nativeplants.org.

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