

# THE SPECIES LILY

The Newsletter of the  
Species Lily Preservation Group  
Affiliated with The North American Lily Society



*L. humboldtii* var. *ocellatum*

Autumn, 2000

## SLPG GOALS

- \* Growing as many species as possible, especially those rare and in danger of extinction
- \* Making excess species bulbs available to members
- \* Collecting, preserving, planting, growing and distributing species seed
- \* Collecting all possible information on each species: its habitat, distribution, cultural needs, etc.
- \* Disseminating cultural information on each species
- \* Assembling a slide and photo record of all species lilies
- \* Identifying areas where specific species grow and seeking protection for these areas.

## SLPG Contacts

Ed McRae  
President  
35310 Skogan Road  
Sandy, OR 97055  
503-668-6443

Barbara Small  
Vice President/Editor  
4234 Randhurst Way  
Fair Oaks, CA 95628  
916-962-1787  
barb-lily@prodigy.net

David Sims  
Secretary  
P.O. Box 82  
Bonners Ferry, ID 83805  
208-267-7257  
sims@dm.net

Maureen Barber  
Membership Chair  
336 Sandlewood Road  
Oakville, ON L6L 3R8  
Canada  
905-827-5944  
ibarber@simpatico.ca

Don Egger  
Treasurer  
7115 SW Frog Pond Lane  
Wilsonville, OR 97070  
503-682-8506  
don@lilies.org

Virginia Howie  
Newsletter Illustrations  
152 Ridge Street  
Millis, MA 02054

---

Special Thanks to Proofreaders Maureen Barber, Ed McRae and June Taylor

*L. humboldtii* var. *ocellatum* photos: Jeff Johnson  
All other photos: Barbara Small

## Table of Contents

|   |       |
|---|-------|
| <i>Lilium humboldtii</i> var. <i>ocellatum</i><br>Jeff Johnson, Long Beach, California              | 4-13  |
| <i>Lilium kelloggii</i><br>Edward A. McRae, Sandy, Oregon   | 14-15 |
| <i>Lilium bolanderi</i><br>Barbara Small, Fair Oaks, California                                     | 16-19 |
| Lily Species Received from Chen-Yi, China 2000<br>Edward A. McRae, Sandy, Oregon                    | 20-23 |
| The Origin of the Bellingham Hybrids<br>Albert M. Vollmer, formerly of San Francisco,<br>California | 24-25 |
| The Burbank Hybrid Lilies<br>Carl Purdy, formerly of Ukiah, California                              | 25-26 |
| Membership Information  | 27    |

## Board of Directors

Jim Doherty  
20900 N Hwy 59  
Barrington, IL 60010

Calvin Helsley  
P.O. Box 306  
Mansfield, MO 65704-0306

Woody Imberman  
520 Orchard Lane  
Winnetka, IL 60093

Richard Kammer  
228 Misty Way, Rt. 5  
Grayling, MI 49738

Robert Livingston  
2751 Stonecrest Court  
Placerville, CA 95667

Barrie Strohmman  
P.O. Box 846  
Neepawa, MB R0J 1H0

# Lilium humboldtii var. ocellatum

Jeff Johnson, Long Beach, California

People who are familiar with *Lilium humboldtii* probably know that it is one of the American dry land lilies, a yellow and red tiger lily that grows in the foothills of the Sierra Nevada in Northern California. There are also two varieties of *humboldtii* that are native to Southern California. These are the most common and most impressive lilies in Southern California.

The reference books are vague about what distinguishes the varieties from the species type except that the variety *ocellatum* (or subspecies *ocellatum*, or *L. ocellatum*, depending on what you are reading) has maroon spots-within-spots on the flowers. "*Ocellatum*" means "like a little eye," which describes the look of the spots. *Bloomerianum* may or may not be a sub-variety or subspecies of *L. humboldtii* var. *ocellatum* or of the species type, depending on what you are reading.

That was about as much as I knew when I moved to Southern California and started to go out looking for lilies. My lily books said that the surrounding counties were home to the variety *ocellatum* but were vague about where to find them. By just hiking around and looking in relatively undisturbed areas of Los Angeles and Orange Counties, I soon started finding lilies for myself and finding out about them. Where I have found *L. humboldtii* in these counties, the conditions have usually been something like this:

- \* between 1500' and 4500,'
- \* in the bottoms of canyons with perennial streams,
- \* above stream level in loose, well-drained canyon soil, not wet muck or packed earth,
- \* where the plants can (probably) put their roots down to perennial ground water,



- \* where the bulbs can (probably) pull themselves down well below the surface,
- \* where trees or groundcover give the ground some protection from full strength sun,
- \* where the stems can get up into the sunshine, and
- \* where poison oak is within sight, if not within reach.



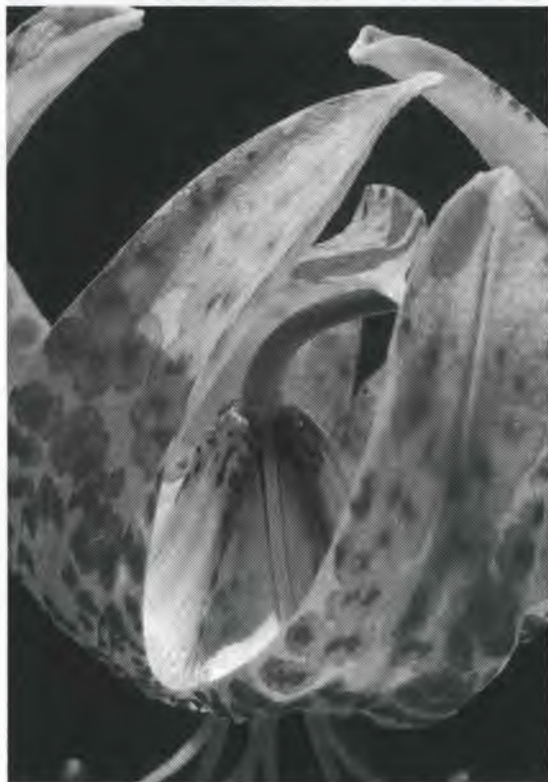
*L. humboldtii* var. *ocellatum* close to a stream and bending to reach the sun

I believe they must grow somewhere below 1500', but I have not seen them. At 4500' in the San Gabriel Mountains, Los Angeles County, the bulbs may be briefly under snow, but I believe the ground would not freeze down to the depth of the bulbs. It appears that the freezing level may define the limit for both *L. humboldtii* and poison oak. One thing I found out quickly is that poison oak is the lily hunter's faithful companion. The best habitat for lilies is also the best habitat for poison oak. I am fortunate that poison oak doesn't bother me very much.

The canyon bottoms where you find lilies are shaded year-round by live oaks and poplars. The lilies normally grow on the banks

above water level, where the canyon soil is a combination of gritty debris that falls down the hillsides and organic material that falls from trees. The steep slopes above the canyon bottoms are brown and hot through the dry summer and fall, and support only heat- and drought-tolerant plants. Winter is the rainy season in Southern California, and blooming season for *L. humboldtii* is roughly late May through July, depending on the season, the elevation, and the particular plants.

Though the plants tend to grow above water level, I have seen *L. humboldtii* growing in Los Angeles County with its stems rising just a horizontal foot from stream water. The bulbs of these lilies had to be below water level. Though the bulb of the species type should be a dry land type bulb, somehow these lilies were getting along basically underwater. I should make it clear that they were



in soil, not the sort of black organic muck or wet-crack-in-a-rock where I have seen *L. pardalinum* and *L. parryi*, wet land lilies that also grow in Southern California. Perhaps these *L. humboldtii* bulbs started in drier soil, then a landslide raised the water level, or carried the soil bank the lilies were growing in down into the stream. Landslides are common in these canyons.

Since the lilies often grow at the sides of streams, the bulbs can wash out in winter

*L. humboldtii* var. *ocellatum* spots within spots

storms. I have noticed some wonderful big lilies missing in the spring when the places they were growing a year earlier were just gone.

The small canyons around here can be very steep, narrow, and rocky, with no open canyon bottom where alluvial deposits accumulate. In the larger, wider canyons, substantial gravel banks can accumulate, and these support willows and other thick streamside brush. Lilies may grow in the most stable alluvial gravel banks, taking hold just beyond where the willows would crowd them out. Some of the best stems are in these places, because they have full sun.

In many canyons, the lilies seem to prefer locations near exposed bedrock. Perhaps the advantage for lilies growing in a small, relatively well-protected pocket of soil is that there is too little soil for competitive plants, or perhaps this kind of rocky place is safer from burrowing animals that eat bulbs.

One common characteristic of a good *L. humboldtii* location is a dead or fallen tree. It is common enough that, when I see lilies, I look for the dead tree. Lilies seem to thrive in a suddenly sunny spot when a tree dies, before the competitive plants grow up and the trees close in again overhead. At the other end of this cycle, you often see lilies that are barely surviving in the deep shade of streamside oaks, where it is dark enough that even the brush has pretty much died back. Though these lilies keep coming up, their stems fall over on the bare dirt and they don't bloom. Of course, if another tree or branch overhead fell, the lilies would be ready for a comeback.

My favorite lily spot has gone part way through this cycle in the eight years since I first visited. My earliest pictures show a crowd of tall stems with many buds standing in a sunny spot, and also show a fallen tree that took some branches off adjacent trees when it fell. By this last summer, the brush had grown up around the lilies and the adjacent trees had cut off most of the direct sun, so few of the lilies made any display. A few still reached up into the lower branches where they got enough light and support to



bloom almost out of sight. A few smaller stems bloomed below the canopy, leaning steeply toward the light. Some collapsed when their buds got heavy, and bloomed in a tangle of weeds. Despite the changes, I still recognize a few individual plants by their location and their distinctive flowers and pedicels.

The colors of *L. humboldtii* flowers are very consistent from Ventura County in the north to San Diego County in the south. The flowers are always bright yellow and bright maroon-red, a combination I have not tired of. They stand out as the brightest things in the landscape when they are in bloom, which means the plants are much easier to find when they are in bloom than before or after. The colors do not fade like the colors of *L. henryi* or many pink lilies.

The character of the *L. humboldtii* var. *ocellatum* spotting is very inconsistent, as are many other characteristics of the inflorescence that you might want to use to distinguish between plants. Plants right next to each other may look less like each other than like plants 50 miles away. To note a few characteristics of the flowers and the inflorescence:

- \* Some flowers have relatively fine spots while others have petal tips that are blotchy or completely red. Some have multiple darker spots within each spot, and a very few have plain, non-*ocellatum* spots.
- \* The flowers are always Turkscap in form, and always face more or less downward, with less variation in size than I would expect, between 2" and 3" diameter fully open.
- \* Some of the Turkscap flowers open tightly so the petals overlap the base of the flower; others open less completely so the petal tips meet to form a cone shape above the flower; on others, the petal tips point straight up, making six individual points above each flower.
- \* On the outside of the developing buds, the spots may show through, or they may not.
- \* The pedicels may be short or long, straight or bent or kinked,



and may stick straight out from the stem or hang down slightly. It is uncommon for the pedicels to angle sharply upward.

- The unopened anthers in newly opened flowers may be pinkish, reddish, or brownish. When the anthers dehisce, the pollen is reddish-brown to bright orange to yellow and fades over time.
- The filaments arch away from the style in various curves and even almost S-curves. When a flower has been open a while, the style may curl upward so the stigma is about level with the anthers.
- The seedpods of a healthy *L. humboldtii* plant are big and square-headed. The pods and seeds are much more substantial than the pods and seeds of the local *L. pardalinum* and *L. parryi*. The pods often have prominent ridges running from base to tip, which look as if they might control, by how they contract, the way the pods open as they dry.



*L. humboldtii* var. *ocellatum* showing the typical whorled leaves of a mature plant.

The foliage of mature *L. humboldtii* plants shows the whorl-like pattern typical of American lilies, though I understand that these are not true whorls by the strictest definition. Smaller plants tend to have leaves that are scattered, not whorled. *L. humboldtii* growing in the shade tends to have flat leaves, but growing in strong sun, particularly at higher elevation, it tends to have ruffled leaves. The ruffling of the leaves appears to be the way the plants reduce the amount of leaf area facing the full sun. The foliage is a

uniform, plain green color.

Where the plants grow in very good conditions, they are taller than a person and have dozens of flowers. The geometric inflorescence of bright flowers, the neatly organized whorls of foliage below, and the towering height are what make a good stem of *L. humboldtii* so impressive. When a big lily grows in enough shade to make it reach a little, the curving stem and the pedicels and flowers neatly realign themselves, giving the plant another kind of graceful geometry. Of course, these are the biggest and best stems. There are plenty of others that are small, blighted, struggling in the shade and chewed up.

*L. humboldtii* may show some signs of disease in the wild. One common problem is the leaves browning and dying off from the bottom of the stem up. These plants usually bloom, at least partially, and usually come back the next year. A different ailment kills the growing tops of the plants before the flower heads grow out, leaving stumps looking black and shriveled on top. This ailment has stunted lilies along miles of stream in some years. Sometimes these stems appear to have had aphids and their attendant ants. Sometimes the lilies can outlast the problem and grow a stunted flower head above the blackened area. My impression is that these problems go away higher up in the canyons and farther from traffic.

The most noticeable lily pollinator is a butterfly that Jim Sullivan of Saskatoon pointed out is a yellow swallowtail. Clearly butterflies of this sort have a larger range than the lily! I have seen these butterflies visiting lilies from northern Los Angeles County to southern San Diego County, often with noticeable amounts of pollen on their wings.

And what about the variety or subspecies *L. humboldtii* var. *bloomerianum*? My lily reference books suggest that this lily is found to the south, higher up, and in drier locations. Last year, I made an effort to look for it. Some California Native Plant Society people directed me first to Cuyamaca Peak, and I found lilies

there.

In contrast to the streamside locations below freezing elevations where *L. humboldtii* grows in Los Angeles and Orange Counties, *L. humboldtii* grows in San Diego County on the rocky slopes of Cuyamaca Peak up to about 6000'. This is close to the top of the peak, and far from any spring. In this high and evidently dry mountain environment, *L. humboldtii* tends to be in pine woods, or at least under the shade of a pine tree, though some are right out in the open among the rocks. They also grow lower on Cuyamaca Peak, and other places nearby in Cleveland National Forest, in forest and by streams, down at least to 4200'. Going only by geographical location, these *L. humboldtii* plants should be *L. humboldtii* var. *bloomerianum*. They do have the *ocellatum* spots.

So what is going on here? On the height of the peak, the lilies appear to be growing in dry conditions like the *humboldtii* in the Sierra, with no poison oak nearby, and where snow can lie on the ground for weeks. At lower elevations, the lilies appear to be growing in conditions like *L. humboldtii* in Los Angeles and Orange Counties. I also noted that below Cuyamaca Peak, at about 5000', the conditions are very much like conditions where I have seen *L. parryi* in San Bernardino County at about 5000' — yellow pine forest, with western laurel and wild roses among the notable streamside plants. Of course *L. humboldtii* tends to stay a bit away from the water, while *parryi* may grow virtually in the water. *L. parryi* has been collected nearby historically, but has probably been extirpated by now.

Where *L. humboldtii* grows high on Cuyamaca, the exposed peak may generate a microclimate with enough extra rain and condensation to make up for the greater exposure. Perhaps the snowfall is heavy enough and lasts far enough into spring to make a difference. I don't know how solidly the ground might freeze there at 6000'.

If the San Diego County *L. humboldtii* is a different variety from the Los Angeles County *L. humboldtii*, I would not have known by looking at the flowers and plants. Other than geographical lo-



cation, my books give only rough and vaguely contradictory suggestions about how to distinguish *L. humboldtii* var. *bloomerianum*. In his 1983 NALS Yearbook article, "Lilies of the Pacific Coast," Orrel Ballantyne said about distinguishing plain *L. humboldtii* var. *ocellatum* from *L. humboldtii* var. *bloomerianum*, "If I gave you a stem or two of each and turned my back for you to mix them up, I could not tell which was which."

I have not done the heavy lifting, in the library, the laboratory, or in the field to qualify me to clear up this point of taxonomic uncertainty. My unscientific attitude has become that it is more certain and more agreeable to think of the lilies as belonging to a place than belonging to a portable taxonomic subdivision. But I do note that the lilies seem to grow under varying conditions, and with stable, isolated populations growing in different conditions for thousands of years, why would there not be more than superficial variation?

Short of laboratory work, the bulbs might tell a story, but I don't think my curiosity justifies tampering with bulbs of plants like these in this area. It would definitely be illegal too.

Someone must have tried growing the *L. humboldtii* varieties side by side, but I haven't read the results of any efforts like this. You would have to be very sure of the source of your material and grow a lot to be sure of any conclusions you might come to. In *Complete Book of Lilies*, Dr. Griffiths was quoted, "In the experimental planting at Bellingham, Washington, consisting of close to 2000 bulbs [of the type of *L. humboldtii*], grown mainly from seed, it is difficult to find two plants upon which the flowers are alike. The vegetative portions of the plants are nearly as variable and the bulbs scarcely seem to belong to the same species."

Currently, *L. humboldtii* is considered uncommon but not rare or endangered in Southern California. *L. humboldtii* has survived in Southern California only because some of its habitat is rugged enough that it could not be developed and is now protected. Between the tangled brush and poison oak, the slippery footing and the rocks to climb over, it is usually difficult to get into the can-

yons where lilies still grow. Since the difficulty of access is what keeps out the crowds that would wipe out the lilies, I am happy to make the effort it takes to see them.

Another side of this is that healthy riparian habitat is uncommon here, and one has to be careful not to damage what one comes to admire. The soil in the remote canyon areas, where the lilies are often best, is usually soft and undisturbed. Careless steps on a loose, steep hillside can damage the hillside and the plants growing there, particularly the seedlings. Careless tromping up streams can disturb stream life. Some remote canyon streams still support native amphibians, including the endangered arroyo toad, which breeds in streams and whose breeding season extends into lily season. One of my favorite lily places was closed this year because it is arroyo toad habitat.

Although wild lilies will always be unfamiliar to the average freeway-commuting Los Angeles suburbanite, the lilies do hang on in a few places where people see them. I am thinking particularly of a stretch of trail that follows a small creek in the Verdugo Hills in Los Angeles County. For years, a particularly large stem of *L. humboldtii* by this trail was cut or knocked down by people passing by. Recently, the stream bed shifted in the rainy season and the trail followed, leaving the stem a little clear of the traffic, which is now mostly bicyclists who speed past downhill without stopping. Now that the stem is in the clear and the pedestrian traffic is discouraged by the bicyclists, this stem has bloomed with the largest inflorescence I can remember on any *L. humboldtii* plant — well over 50 buds and maybe ten feet tall.

One day last year, I met an elderly couple walking slowly up the trail to see this lily. They had also noticed it other years when it was knocked down, and now that it was blooming, they wanted to take their picture in front of it. They had no idea what it was or that it was a native plant. Perhaps such a noteworthy wild native plant may interest people in all the other native and wild things that still survive nearby.

## *Lilium kelloggii* — Purdy 1901

Edward A. McRae, Sandy, Oregon

*Lilium kelloggii* is named for California botanist and physician Dr. Albert Kellogg (1813-1887). It grows in the fog-affected "Redwood Belt" from Northwestern California to Southwestern Oregon.

This fragrant lily has a very narrow distribution. It is not found close to the ocean, but rather on high ridges some miles inland. It has been observed growing at an elevation of 900 meters (3000 feet) in heavy, yellow, gravelly clay soils and brownish-red, loose loams. The drainage is excellent in these dry, rocky places and there is little humus in the soils.

I have viewed natural populations on several occasions and noted enormous variations, especially in plant height and flower color. The light green leaves are arranged in whorls and some plants carry as many as thirty flowers on the tall, pyramidal inflorescence. Plant height varies from two to six feet. These Turkscape blooms have strongly in-rolled tips and vary in color from purple-pink to almost pure white. Color seems to intensify as flowers age. Flowers are spotted and have a citron-yellow stripe on each tepal. The flowers appear in early July. Seed germination is hypogeal.

In cultivating this dry land bulb, excellent drainage is essential with adequate moisture available up to and a little after flowering. Plants can then be allowed to dry out as occurs in their natural habitat.

Several hundred bulbs of this species were grown near Sandy, Oregon, in the 1960s. The bulbs became quite large, reaching 18/20 centimeters in circumference. They seemed to resent being moved and were happy to stay in one place for a considerable length of time. This species behaves identically to *L. wash-*



*ingtonianum* in this respect.

Boyd Kline of Medford, Oregon, is an authority on *L. kelloggii* and recently sent pictures and seed of a pure white form of the species. He also sent seed to us in the 1960s which produced some beautiful hybrids assumed to be crosses between *L. kelloggii* and *L. bolanderi*, *L. humboldtii* and *L. pardalinum*. The lovely pastel-colored clones 'Bunting', 'Nightingale', 'Robin' and 'Snowgoose' were introduced from this population. The charming, dwarf pink 'Humming Bird' was also from this group. Many bulbs were also shipped to our friends in England, including a group named Del Norte Hybrids.

We were inspired in those early years by Boyd's lovely hybrids and decided to cross *L. kelloggii* with strong, wetland type species and hybrids. These included *L. pardalinum* var. 'Sunset', *L. parryi*, 'Afterglow', 'Buttercup' and 'Shuksan.' We were amazed at the relatively high fertility found in these crosses, but we found we had to go to the second generation to obtain clear colors. These colors were pure and included many shades of pinks, clear yellows, creams and a few pure whites. *L. kelloggii* is the only key to producing these lovely colors in Western American hybrids, always crossing the dryland bulbs with wetland forms to produce strong, dependable hybrids.

Derek Fox from England produced some magnificent hybrids from *L. kelloggii*. His 'Lake Tahoe' growing at Edinburgh Botanic Gardens in 1989 was seven feet tall in a planting with perhaps 30 stems, carrying hundreds of rich pink flowers. I truly hope that more can appreciate the beauty of Western American species and hybrids. I have been encouraged by some of the fine material Barbara Small has produced. Persistence of some hybrids in the Pacific Northwest is more than impressive. May the future bring us many beautiful forms with *L. kelloggii* playing a major roll.

## *Lilium bolanderi*

Barbara M. Small, Fair Oaks, California

Native to the Siskiyou Mountains in Northern California and Southern Oregon, *Lilium bolanderi* grows roughly between 900 to 1800 meters (3,000 to 5,900 feet). The *CalFlora Occurrence Database*<sup>1</sup> lists 73 different sightings of the lily beginning in 1899 (Siskiyou Mountains and the Gasquet stage coach road to the Waldo North Coast Ranges) with the last two entries in 1988. In 1936, the species was plentiful enough for Oregon plantsman Edgar Kline to offer the bulbs in his catalogue at \$.75 each or \$7.50 a dozen,<sup>2</sup> and Orrel H. Ballantyne wrote in 1983 that although these beauties were thought to be scarce, they were actually extremely numerous.<sup>3</sup> That does not seem to be the case today. I know firsthand of only one population (near Onion Mountain in the Six Rivers National Forest), and West Coast species authority Boyd Kline has located only two others (at the northern end of Six Rivers and in Oregon's Siskiyou National Forest).



*L. bolanderi* with upturned whorled leaves and glaucous flowers

Those who enjoy Western American species often classify them as either wet land or dry land types. This distinction is quite practical when referring to such lilies as *L. pardalinum* or *L. parvum* that often grow with their bulbs covered by slowly moving stream water during the spring and early summer. While some lilies such as *L. kelloggii* are more difficult to place (there are no nearby streams, but the lilies are 'watered' by the morning fogs which roll in during the summer), *L. bolanderi* easily fits the dry land description. Snow covers the ground in winter, while spring and late autumn rains provide ample moisture. But



during the summer, when the flowers are blooming, only the occasional thunderstorm satisfies these lilies' thirst. Growing in rocky screes in bright sunshine or light shade from nearby pines and manzanita, many of the lilies look thirsty, even in years with plentiful spring rain. The whorled leaves of the *bolanderi* growing in full sun are stocky and turned upward, typical of the leaves of other dry land types such as *L. humboldtii* when they grow in sun. Many are stunted, flowering while scarcely six inches high in order to produce seed in the arid climate. The lily's glaucous bloom may also be a part of the plant's protection from the strong summer sun of the area.



A tiny *bolanderi* with upturned whorled leaves growing in full sun through rocks.

As scarce as I believe these lilies to be, I can't bring myself to dig down and look at the bulbs. They have been described as ovate, up to five centimeters tall, with loosely attached lanceolate scales.<sup>4</sup> Such loose scales are also characteristic of the dry land bulbs of *L. washingtonianum* which thrive under very similar conditions. Seed falls to the ground in late summer, germinating hypogeaally later in the year, and the first true leaves thrust themselves through the rocks in spring. I have noticed that other West Coast alpine lilies reproduce comparatively quickly from seed – for instance *L. parvum* will bloom in two years – and *L. bolanderi* is said to flower in

three years. This may be part of *L. bolanderi*'s survival technique: hurry up or shrivel up!

For several years I have been interested in the great diversity found among the various Western American species, but so far no species has provided me with as much variety as *L. bolanderi*.



Derek Fox and Edward McRae have described the species' height as from 45-90 and 30-120 centimeters respectively.<sup>5</sup> But in the harsh Onion Mountain locale, some lilies in hospitable growing conditions are close to three or four feet while others in the same population are scarcely 14 centimeters (less than six inches). Photographing these miniature wonders is a feat in itself, requiring marvelous contortions and rock-proof clothing!

The velvet campanulate flowers are usually described as brick red with yellow throats and orange pollen, and Patrick M. Syngé stated that *L. bolanderi* "is quite unique in its flower colour, a glorious crimson claret, heavily spotted inside."<sup>6</sup> Besides the tremendous variation in height, the population near Onion Mountain contains colors which may range from beige through orange and pink to dark red [see back cover]. Orrel Ballantyne's picture of a yellow variant is a striking example of such variety.<sup>7</sup>

Only a few lily hybridizers have taken advantage of the special characteristics of *L. bolanderi* — the ability to withstand periods of drought, an almost trumpet-like shape with very little recurve, great color variety and of course the lovely velvet texture. Apparently the first was Eric Mayell, a famous newsreel cameraman who in 1960 found and named 'Henry Bolander', a mauve colored natural hybrid between *L. pardalinum* and *L. bolanderi*. Leslie Woodriff raised the lily, but when he wanted to discard it, Mayell rescued it and later used it in his own breeding program.<sup>8</sup> He introduced the Monterey Hybrids, various mixtures of *L. bolanderi*, *humboldtii* var. *ocellatum*, *kelloggii*, *maritimum*, *parryi* and *washingtonianum*. In 1962 he introduced the Henry Bolander Hybrids, 'Henry Bolander' crossed with *L. kelloggii* and *L. parryi*, and at least one was specifically named — 'Florence Mayell' in 1968.<sup>9</sup>

Noted species authority Derek Fox used Mayell's 'Henry Bolander' and *L. bolanderi* for at least two of his beautiful West Coast hybrids:

\* Bullwood Hybrids (*L. pardalinum giganteum* X pink Henry

### Bolander Hybrids)

- \* 'Cherrywood' (*L. pardalinum* X pink 'Henry Bolander')

From the Bullwood Hybrids he introduced

- \* 'Peachwood' (selection from Bullwood Hybrids)
- \* 'Melba' (rose red Bullwood Hybrid X (red Bullwood Hybrid X *L. kelloggii*))
- \* 'Pumpkin' (Bullwood Hybrid X *L. parryi* hybrid)
- \* 'Coachella' ('Yellow Maid' X Bullwood Hybrid)

Finally, he included *L. bolanderi* into the mix:

- \* 'Lake Eleanor' (rose red Bullwood Hybrid X *L. bolanderi*)
- \* 'Lake Tahoe' (Peachwood X *L. bolanderi*)
- \* 'Lake Tulare' (Bullwood Hybrid X *L. bolanderi*)

Now a new group of hybridizers has been using *L. bolanderi* pollen, and one day soon we hope to view the first flowering. Given its rigid growing requirements, *L. bolanderi* will never reside in most of our gardens, but perhaps one day we might all enjoy its progeny.

- 
1. Available at [www.calflora.org/](http://www.calflora.org/).
  2. Eugene Fox, 'Cataloging the Lily Evolution' in *The Lily Yearbook of the North American Lily Society, Inc.*, 1999, p. 17.
  3. 'Lilies of the Pacific Coast' in *The Lily Yearbook of the North American Lily Society, Inc.*, 1983, p. 12.
  4. Derek Fox, *Growing Lilies*, Croom Helm Ltd., England, 1985, p. 90, and Edward Austin McRae, *Lilies: A Guide for Growers and Collectors*, Timber Press, Portland, Oregon, 1998, p. 113.
  5. Fox, p. 90, McRae, p. 113.
  6. 'Some Interesting Lilies of the Pacific Coast' in *The Lily Yearbook of the North American Lily Society, Inc.*, 1959, p. 50.
  7. Ballantyne, *op. cit.*, p. 15, plate 2.
  8. Mrs. Martyn Simmons and Chairman Oliver Wyatt, 'Lilies in the Show: A Lily Group Discussion' in *The Lily Yearbook*, 1969, p. 86.
  9. [Editor's Note: Mr. Mayell apparently retired to my home town of Carmel-by-the-Sea in the 1950s and did his hybridizing there. What a shame that I had no knowledge of him or his interest in lilies!]

---

**Correction:** Kristin Swoszowski-Tran, rather than John Lykkegaard, is the photographer of the *L. bakerianum* var *delavayi* which appeared on the back cover of the spring 2000 newsletter. Thank you, Kristin!

# Lily Species Received from Chen-Yi China, 2000

Edward A. McRae, Sandy, Oregon

The collection of bulbs was planted in pots and trays and grown in a cool greenhouse at Fairdale Nursery, Wilsonville, Oregon. A well-tested soil mix under the name 'Liner Mix #1' was used; the mix contains well-decayed bark dust, sphagnum peat moss, sharp pumice and essential nutrients. The bulb size varied from the tip of your small finger to 16/18 centimeters in circumference. Small bulbs were planted in trays, large bulbs in pots. We found the summer fascinating as the lilies came into flower, many of the species being forms we were seeing for the first time.

A group of *Nomocharis* was the first to flower, and two distinct species were observed. *N. aperta* was both charming and beautiful with saucer-shaped flowers of rich purple-pink reverse and inner markings. The species strongly resembled *N. synaptica* grown in earlier years. *Nomocharis pardanthina* var. *farreri* was also beautiful with open flat flowers, copious spots and frilled petal margins. Populations of *Nomocharis* species grown from seed would be welcomed by many, the genus having a special charm and beauty.

*L. pumilum* was naturally the first lily to flower, and two distinct groups were observed. The first group labeled 'Tangerine Flowered' was excellent with flowers especially large for the species; color was intense and the fragrance especially strong. The second group flowered one week later; all plants had heavy pubescence. Flowers were smaller and richly colored.

We were thrilled when *L. amoenum* flowered, especially by its delicate beauty. The bell-shaped flowers were of perfect form with attractive lavender markings in the centers. Two plants flowered, each with a single, nodding blossom. The pollen was saved from the first flower but unfortunately the quality was poor and no seed was ob-



tained. *L. duchartrei* produced two flowering plants carrying marble-white pendant flowers with scattered wine-red spots. This species appeared identical to forms under cultivation in the British Isles.

Two stunningly beautiful plants identified as *L. nanum* flowered early. These plants were illustrated in 'Trip to China' Part 2 under *L. nanum*. They were, however, vastly different from plants I had originally known under this name. Such special beauty is hard to describe and this species simply delighted me. The bowl-shaped white flowers were carried on single stems, the center of the flowers had a lovely pink to lavender blush, and leaves were narrow and almost grass-like. World species authority Harris Howland visited from England when this special lily flowered. Harris determined that it was *L. sempervivoideum* which is described as having pendant white flowers with fine purple spots. I'm inclined to agree with Harris' identification.

Three numbered groups proved to be *L. lankongense* and all three were very close to the *L. lankongense* at present in cultivation. Two plants of *L. bakerianum* flowered in late June and were identical to the forms from Chen-Yi illustrated on the Internet and also to the form flowered by Barbara Small in 1999. The bell-shaped flowers were pendant and green to brown in coloring; flowers were heavily spotted and delicately fragrant.

*L. taliense* was the form named variety *kaichen*. Another species under #L06 also appeared to be a form of *L. taliense*. Several plants flowered but failed to produce seed after careful pollination. We will study this further in 2001. *L. tigrinum* seemed to flower early for this species. Flowers were large with bright orange coloring and copious spotting. Several plants flowered but didn't seem typical of the true diploid *L. tigrinum*. This was one group I suspected was a clone — perhaps even a hybrid. *L. distichum* was the one species with whorled leaves and small, unspotted orange flowers. Bulbs had the jointed scales said to be typical for this species. *L. davidii* flowered in early in July and was iden-

tical to the forms of this species we already know. We will know more of the plant habit when larger plants bloom next year.

Eight large bulbs labeled *L. bakerianum* var. *delavayi* were actually *L. primulinum*. The broad foliage resembled that of *L. nepalense*; however, the flowers were totally different, being soft lime-green in color with blotches of oxblood red coloring in the center. The flowers were pendant and quite large (four to five inches in diameter). It was a thrill to see this striking species. It has also been grown well from outer scales taken last winter when the bulbs arrived from China.

The Chinese trumpet species were all fascinating. *L. regale* was, naturally, first to bloom with the flowers much larger than expected; plants were short with narrow leaves as we would expect. A good seed crop is developing and we look forward to a meaningful seedling population in two years. *L. sargentiae* was a very variable population and nothing like what H.F. Comber regarded as the true species; plants seemed to resemble forms of *L. leucanthum*.

*L. leucanthum* flowered two weeks later with dark green reverse coloring in the long trumpet flowers. The inner flower tepals showed a clear cream shading. Considerable pods are developing on this species also. Much later flowering was the tallest of all — *L. sulphureum* which reached five to six feet in height. The flowering time varied. All flowers, however, were rich cream to sulfur-yellow in color and strongly fragrant. I have no doubt whatsoever that we have the true species. All plants were covered in bulbils, almost in every leaf axil. Some plants had green bulbils, others purple-brown. Bulbils were collected and we will plant them next spring; hopefully a quantity of bulbs will be available to members in two years.

A considerable number of plants labeled *L. henryi* were actually *L. rosthornii*. Plants were two to three feet in height with long linear-lanceolate leaves of dark bottle-green coloring. The only

resemblance to *L. henryi* was the orange flowers with copious papillae. We now have long, oblong seed capsules developing and anticipate an excellent crop of seed. I would love to see this fascinating species used in hybridizing. *L. henryi* (as we all know the species) flowered just ahead of *L. rosthornii* and we have considerable capsules on these plants also. None showed the dark nectary channels described by some who have received this species from Chen-Yi. I crossed the two species both ways; it will be interesting to see if fertile seed is produced from the protected crosses.

*L. brownii* flowered late and appeared identical to forms grown under *L. brownii* var. *australe*. Plants are tall and are bearing large pods.

*L. speciosum* var. *gloriosoides* was truly spectacular and drew gasps of admiration from all who were privileged to view the plants. They were also totally different from what we grew originally under this name. The huge white reflexed flowers are copiously covered with raised orange spots and the flowers have a spicy fragrance. This species is a most welcome addition to the gene pool. Excellent pods have developed.

Two other species flowered, both of which we are uncertain regarding names. Harris Howland felt that one was *L. x anthellum* of which two plants flowered; blossoms were tiny and covered with masses of purple spots. The other species had very narrow leaves and small flowers of green coloring; plants, unfortunately, were partly withered and not at their best for identification purposes.

All plants were photographed and seed was produced whenever possible. Further study will be done under field conditions in 2001. Hopefully, we can increase our knowledge of this fascinating collection of species. We welcome information from all who have experience with these recent Chinese introductions, especially from Chen-Yi. Seed would be especially welcome.

# The Origin of the Bellingham Hybrids

Albert M. Volmer, formerly of San Francisco, California

According to the United States Department of Agriculture Bulletin No. 299 published in December, 1933, Dr. Griffith states that in May, 1919, he visited Mr. Carl Purdy at his home in Ukiah, California. During a discussion of the cultivation of lilies from seed, Mr. Purdy showed Dr. Griffith a lot of seed labeled *Lilium Humboldtii magnificum* [var. *ocellatum*?], stating that it was from plants cultivated by one of his correspondents who delighted in mixing things up, but seemed not to be particularly interested in doing anything further than producing the seed. Mr. Purdy replied that he had forgotten from whom he received the seed.

In July of 1940, while passing through Ukiah, I stopped off to chat with Mr. Purdy, and during the discussion, Mr. Purdy informed me that he thought that Mr. Robert Kessler, one of his collectors, living in Los Angeles, had supplied him with the seed that was responsible for the Bellingham Hybrids. In September I called upon Mr. Kessler, and during a very pleasant evening discussing lilies, he stated that he did supply Mr. Purdy with the seed and told me the following story.

Mr. Purdy sent him an order for one pound of seed of *L. Humboldtii magnificum*. In due course of time, Mr. Kessler went out into the hills and collected a large paper bag of this seed from wild plants. When he returned home, he weighed the seed, and found that he did not have the required amount. As he had quite a few of these lilies growing in his garden, he made up the deficiency by using the seed from those growing in his garden, except that he kept them separate, as he had crossed his garden plants with pollen from other lilies he had been growing at that time. At that time, he had been growing in addition to *L. Humboldtii magnificum*, the following lilies: *L. Humboldtii* type, *L. bolanderi*, *L. pardalinum*, *L. Parryi*, *L. Kelloggii* and *L. columbianum*. He also stated that he sent Mr. Purdy only the seed from the *L. Humboldtii*



*magnificum* plants, so this lily is the seed parent of all the Bellingham hybrids, and some or all of the above, are the pollen parents. Mr. Kessler did not keep any record of his crosses, and from Dr. Griffith's bulletin, apparently only *L. pardalinum* and *L. Parryi* are the pollen parents.

---

Reprinted from *The American Lily Yearbook*, George Slate, ed., The American Horticultural Society, 1942, p. 60.

## The Burbank Hybrid Lilies Carl Purdy, Formerly of Ukiah, California

I think that it was in 1890 that Luther Burbank made me a visit at my Ukiah home and that began a close intimacy that lasted through his life.

Soon after that I visited him in Santa Rosa and saw his experimental gardens there and went with him to the larger place at Sebastopol eight miles west from there where he grew his larger lots of hybrids. I think that it was on the occasion of my first visit that he showed me a large number of seed flats in which he had seedling lilies from plants that he had hybridized.

This experiment was a very extensive one. He had chosen as the female for most of his crosses *L. pardalinum*, a species of great vigor and easy culture. For the male species he had taken pollen from fully thirty world lilies including such as *L. candidum*, *L. speciosum*, *L. auratum* and a number of other Old World species.

He had also made crosses of about all of the West American species that were obtainable at that time. I do not think that *L. humboldtii magnificum* was amongst them for I am very sure that I did not reintroduce it till later.

There were *L. washingtonianum* x *L. pardalinum*; *L. Humboldtii* x *L. pardalinum*; *L. parvum* x *L. pardalinum*; *L. Parryi* x *L. pardalinum*; *L. columbianum* x *L. pardalinum*; — I am sure. Four or

five Western lilies were not included because I did not introduce them into culture till later. There were also a few crosses in which other Western lilies were used as female plants. I do not, however, recollect just which.

Some years later Mr. Burbank asked me to visit these seedlings then in full bloom. He had leased a piece containing about three acres near Sebastopol for this culture.

The soil was most excellent being friable sandy loam and the location was where summer fogs were frequent yet with enough sunshine for all of the deciduous fruits. The lilies were planted like corn in rows about three and one-half feet apart with each seedling having enough room for best development.

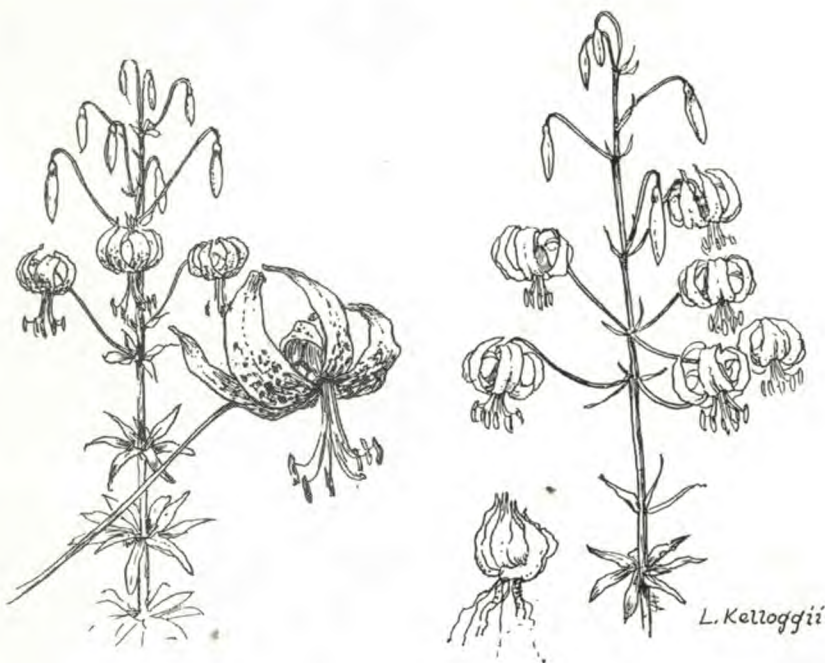
It was a wonderful sight. The plants varied from a couple of feet to as much as eight feet. Of course, there were some blanks where seedlings had died but at large it was one great mass of flowering lilies. Strangely enough, there was not the faintest trace of the influence of the old World lilies but there were endless combinations of the West American species.

Many had the fragrance of *L. parryi* and *L. washingtonianum* but none came white or clear yellow although many approximated the latter color. There were literally thousands of crosses which would be considered achievements now and the task of selecting from so many was monumental. Perhaps the notable were grand lilies of the *L. Humboldtii* X *L. pardalinum* cross. The exceedingly strong growing bulbs were intermediate between the rhizomatous bulbs of *L. pardalinum* and the ovate bulbs of *L. humboldtii*.

Mr. Burbank made selections from this grand array and quite a few went out to world gardens at the time. Later he turned over to me those which he still had and I grew them magnificently, first at my gardens at Lyons Valley, which were wonderfully adapted to them, and then in the gardens at The Terraces where I now live. ...

---

Reprinted from *The American Lily Yearbook*, George Slate, ed., The American Horticultural Society, 1942, pp. 60-62.



*L. humboldtii* and *L. kelloggii*  
Drawings by Virginia Howie

---

## Membership Information

Canadian dues \$9.00 per year, 3 years for \$25.00. United States dues \$7.00 per year, 3 years for \$20.00. Memberships may be renewed by contacting our membership chairperson

Maureen Barber  
336 Sandlewood Rd.  
Oakville, ON L6L 3R8  
Canada  
905-827-5944  
ibarber@sympatico.ca





*Lilium bolanderi*



*Lilium kelloggii*