Pacific Coast Lilies and their Culture

By Carl Purdy

In an article in the June number of the Journal I gave some notes on general conditions on this coast as bearing on acclimatization of plants in the Eastern United States. In this number I treat the Western Lilies in detail.

Some species of the Western Lilies and notably L. Pardalinum, L. Washingtonianum type and L. Humboldtii were sent to the Eastern United States and to Europe at an early date and for the last thirty years good collected bulbs of nearly all of the species are available for culture. In Europe and especially in England they have been well tried out and many of them quite as successfully as the generality of world Lilies.

It is difficult to generalize on lily culture. Each species has some individuality as to likes and dislikes and some are very decidedly difficult until the exact equation is discovered. Then there are matters never explained, as for instance why the common Madonna Lily luxuriates in English cottage gardens yet is often the despair of the highest trained gardeners. I
feel that no matter how skilled the grower or easy the species there is an element of experiment in the culture of all lilies and that the likely grower always has something new to learn. But against an element of uncertainty as to lilies in general rests the comforting fact that nearly every grower can succeed with a number of fine species.

At the Lily Conference held in London July 1901, a paper on "Western American Lilies" written by the writer was read. Lately Mr. A. Grove, an Englishman, has written a valuable monograph on the world's lilies which is the latest authority. As Mr. Grove's data on Western Lilies was, I think, entirely secured through cooperation with the writer I take it that, unless perhaps in nomenclature, our conclusions vary but little.

All of the Western American Lilies would fall under Baker's Bulbion or funnel shaped flowers, or Martagon with the segments revolute, but for the purposes of this article I shall disregard this division and group them as to their affinities in bulb and habitat. This because the article is designed rather to give data on culture than as a key to species.

I will therefore divide them into three groups.

GROUP I. Lilium Humboldtii typifies these. They have ovoid or ovate bulbs composed of long closely overlapping scales not usually jointed. The flowers are of the Revolute type.

GROUP II. Lilies with ovate or ovoid bulbs of long overlapping scales not usually jointed and with funnel-form flowers excepting Kellogii in which they are revolute.

GROUP III. Lilies with rhizomatous running bulbs having a central core densely covered with small overlapping scales which are nearly always jointed. The flowers may be revolute, broadly, or narrowly funnel form. Lilium Pardalinum, L. Parryii, L. parvum, and L. maritimum respectively typify these which for convenience will be treated separately, with some notes on related forms. All of these are usually called Bog Lilies. All of them are found within the boundaries of the great state of California. Seven of them extend into Southern Oregon and three throughout Western Oregon, while but one crossed the Columbia River and extend to British Columbia.
One only is certainly found in Arizona and possibly New Mexico while one possibly grows in Lower California. Neither the first nor the second group have any close affinities either east of the Rocky Mountains in America or in the Old World. Mr. Burbank was unable to cross any of them with Old World lilies in a cross which showed any signs of interbreeding. All of them can be and have been intercrossed.

The third group has in *Lilium superbm* a near relative of *L. Pardalinum* and in *L. canadense* a first cousin of *L. parvum*.

**GROUP I**

*L. Humboldtii*

The bulbs are large, often measuring 8 inches in circumference and not infrequently up to 15 inches, are nearly ovate and very compact and of thick unjointed scales. They are very easily handled either dry or in barely moist packing.

The stems are very stout and self supporting and rather rough as is the foliage. The larger portion of the leaves are disposed in many whorls, while the large flowers are from six or eight in small plants, to twenty to thirty very commonly, and up to eighty in exceptionally fine specimens. As the lower pedicels are quite long and as they reduce as they ascend the inflorescence of a fine plant is almost a perfect pyramid. The perianth is 3 to 4 inches long and closely revolute, nodding, and of a rich orange color. Many claret colored dots are on the central portion. In size of flowers it averages about as in *L. speciosum*.

It is found only in the Sierra Nevada range of Central California and usually at an altitude of from 2500 to 4000 feet. There is an exception however in a large colony on the Sacramento River at little over 300 feet above sea level. It is a woodland lily found associated with Yellow Pine (*P. ponderosa*) and deciduous oaks, but is more likely to be found in an open forest where the trees are scattered in a park-like manner. There it is not confined to any exposure but is scattered widely and usually in a rather clayey soil. Still I have seen it in an
alluvial deposit in open canyons and on the Sacramento River it is in a sticky black clay (adobe).

It might well be supposed that it is strictly a woodland lily and it is so naturally, but where, as often occurs, the land is cleared and orchards or grain fields succeed the forests, this lily can be seen larger and finer than is the rule in woodlands and the bulbs are wonderfully fine. Undoubtedly the cultivation tends to keep the moisture up. But on the other hand the California summer in that region is very hot and the sun baking very severe.

I think that without question its natural distribution in woodlands is only due to the fact that its seeds need the moisture nearer the surface and the protection, but that when they are once well started it is immaterial. A year ago I saw hundreds in a vineyard flowering finely among the grapes.

To diverge a little from the subject, I think that practically all lilies which flower freely the first season after planting have a liberal supply of roots above the bulbs, and that the best forcing lilies are those in which this tendency is most marked. These upper roots feed the flowering stem but do little to develop the bulb. The basal roots which are the mainstay of the plant are much slower in developing and we often find this conspicuous in Lilium auratum. We have a glorious bloom the first year with heavy roots above the bulb, but in the fall we find that the bulb has decreased in size or even disappeared altogether. It is easy to flower Lilium auratum well, hard to establish it.

Lilium Humboldtii has no roots above the bulb and is a little slow in forming roots at the base, and so the grower need look for no flowers the first year or even find that the bulb lies dormant with no stem at all. But when once established it is a strong grower and very persistent. I am sure that wild bulbs are often twenty or thirty years old and I would not doubt a century.

In California the decay of the old scales proceeds very slowly, each year a scar is left by the growing stem and I have often counted fifteen or twenty scars, each recording a year of lily
LILIUM HUMBOLDTHI
MAGNIFICUM
life, while even then a mass of leaf mold shows where still older
growth preceded the earliest of these scars.

In cultivation at The Terraces I find _L. Humboldtii_ most easy
and this whether in a reddish soil rather clayey, in gravelly
soil rich with humus, in silty soil with much lime, or in an
alluvium. Elsewhere it takes well to heavy clays. I cannot
see but that in any of the aforementioned soils it does as well
as in its native home.

**LILIMUM HUMBOLDTII MAGNIFICUM**

A large strong growing lily with stem and foliage much like
the type. The foliage is rather darker and smoother. In
form, size of flower and manner of inflorescence it is also similar,
but in color very different. The basic color is rich orange but
there are many purple-maroon dots each encircled with crimson,
and often almost covering the entire orange base. It is a most
striking coloration.

In bulb the two are quite dissimilar. _Magnificum_ has an
ovoid or elongated bulb of thick scales some of which are always
jointed and often several jointed. With slight exposure the
bulb colors a deep purple.

Also most distinct is the fact that a very liberal supply of
roots are formed above the bulb, that even small bulbs flower
and that any fair bulb is sure to give a good bloom the first
year as well as to root well at the base for permanent estab-
ishment. This makes this variety a most excellent garden lily. I know of few better.

A native of Southern California, it is found in the range facing
the ocean beginning at Santa Barbara and on down to Los Angeles
and in the mountains east of that city. Within this region its
distribution is only in the canyons and a hundred feet or so
from the bottom. This is due without doubt to the need of
its upper root system for surface moisture, which in that rather
arid region would not be found elsewhere.

It is often very deep seated. In some of the Southern Cali-
ifornian mountains there are peculiar canyons with flat bottoms
LILIUM HUMBOLDTII
MAGNIFICUM
from 50 to 100 feet wide built up of round boulders and alluvial soil. In these bottoms I saw this lily as much as 12 feet high with unbelievably heavy stems.

Robert Kessler saw a wild specimen about 12 feet high and had 85 flowers. At Sierra Madre in the valley east of Los Angeles a garden specimen was seen two years ago that produced two stems with 100 flowers and last year three stems and 85 flowers. The first year the stems were 11 feet high and last year 8 feet.

Some of the bulbs were fully 3 feet down and many 2 feet. I take it however that this was rather from debris being washed over established bulbs than through the bulbs seeking that level, but it demonstrates that lilies can be planted very deep if the soil is sweet and well drained.

Early botanical writers described a *Lilium Humboldtii ocelatum* and their figures and descriptions cover both this lily and the next. For garden use however I prefer the name given above as it is now well established.

**Lilium Humboldtii Bloomerianum or Lilium Bloomerianum**

This lily is exactly like the preceding excepting that it is a minor form. It is a handsome slender lily growing from 2½ to 4 feet in height with from a few to twenty fine flowers colored as in *magnificum*.

Its bulbs are conspicuously jointed with two or three joints which easily detach so that unless handled very carefully the bulb becomes truncated. It is easily grown and a sure, free bloomer.

In the two southern counties of California adjoining the line of Lower California striking, separate short mountain ranges rise from a comparatively low country and to quite a height. I have not the data at hand but I think as high as 10,000 feet. While very arid at their base the upper reaches are clothed with beautiful forests of pine and deciduous trees and it is here that *Lilium Humboldtii Bloomerianum* finds its home.
LILIMUM COLUMBIANUM

This beautiful lily has a small bulb seldom weighing over an ounce and composed like that of *Humboldtii* of closely appressed lanceolate scales which are not jointed. Its foliage is a light pleasing green, smooth and mostly in whorls, the few to perhaps a dozen flowers are a light orange perhaps well described as golden, with some small dotings. The segments are closely revolute. It is hardy, graceful and adaptable—a nice lily to do with.

Its extremely wide and varied habitat well demonstrates its adaptability. In California it first occurs close to the ocean near Humboldt Bay well to the northwest corner of the state. There it is in sandy soils on raised ocean beaches and in the open among scattered shrubs. The ocean is near at hand and the climate is very rainy in winter and foggy in summer. A little further north in Southern Oregon it is scattered through open woodland in the moister reaches. In the Willamette Valley, the great Valley of Oregon, in the Puget Sound region and north in coastal British Columbia it is very widely distributed in open woodlands and usually associated with the Brake ferns. I have seen it among ferns 5 or 6 feet high only slightly overtopping them. Throughout these regions the soil varies greatly, now rather clayey, then decidedly sandy, but always with an abundance of leaf mold at the surface. East of the great Cascade range in northeast Oregon and on up into British Columbia it is widely scattered as a woodland lily associated with ferns. In this region it meets a decided winter not far from that of New York in cold, but drier.

I find no difficulty with its cultivation in any type of garden loam, while it is happy in a sandy loam. The bulbs are very easily handled but being small there is much danger of their losing vitality by being handled too dry. I think it better to keep in barely moist peat from the first until planted.
LILIUM BOLANDERII

This is quite different from the other lilies of this group and indeed from all other lilies. The bulbs are like those of *L. Columbianum* but composed of fewer and thicker scales. They are small. The leaves are smooth, the foliage rather dark and the few flowers half erect, funnel-formed with spreading tips and of a peculiar red rather approaching a brick red. The inner base is faintly dotted and the lily at large rather suggests a *Fritillaria*.

It is one of the most local of Lilies, and is found only near the border of California and Oregon and probably a square of 20 miles would include every wild specimen. It is found mostly at an altitude of from 3000 to 5000 feet.

It was mistakenly ascribed to Humboldt County, California by Sereno Watson who named it, but that was due to the confusion of herbarium specimens with *Lilum Kellogii*. Through this odd confusion Professor Bolander an eminent early botanist after whom it was named as its discoverer never saw it until years later.

In its native home it is either found in very open woods or associated with low growing shrubs and in a reddish mineralized soil which is rather clayey than otherwise.

In cultivation a well drained soil either clayey or gravelly meets its needs and I cannot say that it is a particularly difficult lily if—There is always an “if.”

In this case it is that it is rather difficult to handle the bulbs without overdrying unless they are collected late, say past mid October on. If then never allowed to dry but packed in moist leaf mold or peat they can be kept in good order. Overdrying is not so dangerous in a large lily bulb but in the case of a bulb an ounce or so in weight it is decidedly devitalizing.
LILIUM WASHINGTONIANUM

The typical Lilium Washingtonianum is a large strong-growing lily with a bulb composed of long and slender rather thin, overlapping scales and in the wild bulbs the bulb is much elongated laterally. This is not true in cultivation.

Both stem and leaves are smooth and of a pleasing light green, and the leaves are disposed in many-leaved whorls. The large funnel-formed flowers vary from a few to thirty but exceptional plants bear far more and even fifty may be found. Many years ago I visited a mountain side where thousands were from 4 to 7 feet high and had borne from twenty to thirty blossoms. If in the shade the stems tend to be slender but in the open they are often quite stout.

The petals are 2\(\frac{1}{2}\) to 3 inches long and the tips merely broadly spreading—not recurved. This makes quite a large flower. The color is uniformly white in the type and there may be small purple dots at the center.

It is a gloriously lovely lily in every way but I think that its greatest charm is in the exquisite spicy fragrance unexcelled by any flower. In its flowering season it perfumes the mountain sides, yet has not the overpowering sweetness of some of the Japanese lilies.

As the traveler ascends the long westerly slope of the Sierras of Central California he finds Lilium Washingtonianum shortly after he leaves Lilium Humboldtii and from 4000 to 7000 feet altitude. It is widely distributed from the Yosemite Valley northward to where the Sierras end southeast of Mount Shasta.

Seldom really in woodlands, it is usually found in copses of shrubbery through which it grows. If the copses are burned it simply luxuriates for about three years and numbers of seedlings grow. As the shrubbery grows up it dies out excepting where the shrubbery is least dense. I have seen it wonderfully happy just below where a melting snow bank watered it in late July.
The native soils in these regions are always open and rather loose. While often of volcanic origin they are usually in appearance a sandy loam well mixed with mold. Perfect drainage is ever present.

LILIUM
WASHINGTONIANUM

I wish that I could recommend this grand lily for general culture but after well toward forty years acquaintance with it I can point to few successes. Perhaps others will grasp the point which I have missed.

It has no roots above the bulbs and roots at the base rather slowly. While strong flowering stems are usually pushed up