

Summer, 2012



~ Gardening with Bulbs ~

Volume 11, Issue 3

The Bulb Garden

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A Bulb Tour in Northern Chile

Jane McGary

Jane is a past president of PBS and gardens in Milwaukie, Oregon, near Portland. She is interested in rock gardens as well as bulbs grown in cold frames.

The *desierto florido* of northwestern Chile is as famous a floral display as the flowering desert of southern California, its Northern Hemisphere analogue, and both put on their early spring shows

time. I was fortunate enough to see the 2002 flowering, but several years later the predicted precipitation of El Niño fizzled out, and my friends and I had to abandon our planned itinerary and flee to the south, where flowering is more constant from year to year. Later, a disappointment on an AGS tour in Jordan confirmed the principle that botanical trips to deserts have to be a nearly last-

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Jane and her companions picked a wonderful year for a botanical tour! This photo shows a riverbed at the Parque Nacional Llanos de Challe, a good locale to see *Leontochir ovallei* (see photos, page ten). *L. ovallei*, endangered in the wild, is a favorite snack of guanacos and goats. Photo by Jane McGary.

only in years of unusually high winter rainfall. Planning a trip to see the bulbs and other desert flowers, thus, is not something you can do a year ahead of

minute decision. This was how I recruited three other PBS members—Diane Whitehead, her partner Don Jones, and
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A Bulb Tour in Northern Chile (cont'd)

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Gene Zielinski—to join me in September 2011 in the flowering desert.

We flew separately to Santiago, and by September 23 we were on the road in a rented SUV. Our first stop was a favorite of mine, the little coastal town of Pichidangui, just off the freeway and popular with vacationing Santiagueños. Along the road skirting its cove is a rocky shore with public access where many plants were in flower, including a fine display of *Alstroemeria pelegrina*. This low-growing, showy coastal species has shiny, bright green leaves and has been used in

hybridizing the short alstros now sold in garden centers as bedding plants, but it has to be grown frost-free and seems to have passed this on to many if not all of its descendants. Like many other alstroemerias, it grows well wandering among rocks. We stayed in a hotel right across the road, and Gene, an avid birder, enjoyed an early-morning walk spotting new additions to his life list.

I'd planned our itinerary to make sure of a weekend day near the well-known botanical reserve of Fray Jorge, which isn't always open on other days. As we headed north, I deployed the "Stop!" signal so we could clamber up a gully to the vegetation between the freeway and the livestock fence into a paradise of bulbs: deep blue *Pasithea caerulea*, brilliant scarlet *Rhodophiala phycelloides*, purple-and-crimson *Leucocoryne purpurea*, white *Oziroë*, all growing amid grasses and low shrubs.

After we turned off toward Fray Jorge, we stopped again to photograph a glowing mass of *Leucocoryne*, some of which may have been hybrids between *L.*

purpurea and *L. coquimbensis*. The ranger at the reserve told us that he had never seen such beautiful flowering in the area before. Fray Jorge is preserved because it contains a relict woodland including many species that otherwise are found far to the south; like Point Reyes in California, it is a part of the coast that has moved northward with tectonic activity over the millennia. A loop trail takes visitors through both the dense woodland, rich in trees and woody climbers, and an open area of scrub filled with herbaceous and bulbous plants, including two endemic composites. This was our first sight of *Tropaeolum tricolor*, which

we would see in various sites; it's one of the hardier *Tropaeolum* species, tolerating some frost and flowering lavishly when given a supporting structure. Though the greatest species diversity in northern Chile tends to be in the Coast Range and between it and the Pacific shore, I like to visit inland areas too. Our first venture to the east was to



The reward at a roadside stop. Clockwise from top left: *Leucocoryne purpurea*, *Rhodophiala phycelloides* (photos by Jane McGary), and *Pasithea caerulea*. (photo by Eugene Zielenski.)



Pichasca National Monument, established primarily for the presence of a "petrified forest" that is now much reduced by removal of the fossilized trees, but also interesting for its flora, and an invigorating walk on a well-marked loop trail. Even in the early spring the inland areas can experience hot weather, but the coast is usually cool and foggy.

Moving on, we came to the fishing town of Huasco, a good place for botanizing because of the coastal roads running both south and north from it and several routes between Huasco and the Ruta 5 freeway. The first day's excursion was along the coast road south of

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A Bulb Tour in Northern Chile (cont'd)

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Huasco (turn south near the suburb of Huasco Bajo on a road signed to Aguada de Tongoy), where we had gone a few years before but had not continued because of the condition of the road. This time it was in much better shape, and we made it to a truly spectacular site. A seasonal river runs between rocky hills right on the coast and huge stabilized dunes to the east. Up the slopes of the rocky hills spread vast blankets of pale blue *Zephyra elegans*, with showy *Alstroemeria philippii* among the shrubs.

(While walking on a beach elsewhere, I came upon a group of plants that seemed to be *Z. elegans*, but their inflorescences emerged right at the sand surface;

were the richest. *Rhodophiala ananuca* appeared on the river flat; when I walked to the base of the dunes it was obvious where it preferred to live.

Thousands of rhodophialas were growing up the lower third of the dunes, which rose to perhaps 75 meters (246 ft.) higher than the flat, sloping rather steeply. *R.*

The next day took us inland to Parque Nacional Llanos de Challe, best known to plant-lovers as a good place to see *Leontochir ovallei*, the *garra de leon* (lion's paw), a monotypic genus closely related to *Alstroemeria*. A ranger helpfully directed us to a very good site off a dirt mine road, apparently a place that the park staff preferred to send tourists so they could watch them and keep them from plundering the flora. Despite a couple of other parties there, it was a great site, with very large specimens of *Leontochir* in its typical habitat of large talus and crevices. The inflorescence, about 10 inches (25 cm) in



Left to right: *Zephyra elegans* (photo by Eugene Zielenski), *Rhodophiala ananuca*, and *Alstroemeria philippii* (photos by Jane McGary).

perhaps the bulbs were so deeply buried by blowing sand that this form occurred here.)

On disturbed ground was *Pabellonia incrassata*, looking very much like *Narcissus tazetta*. But the dunes

ananuca is variable in color, and we could hardly stop photographing them—every shade from pure white to coral-pink (and not a seed to be seen). Among them were the emerging shoots of the rare endemic *Alstroemeria werdermannii* in great numbers. I have only seen it in essentially pure sand. It isn't one of the showier species, but very interesting.

diameter, is borne at the end of a long, very leafy annual stem and is an umbel of big bright crimson, bell-shaped flowers, dripping with nectar to encourage hummingbirds. Llanos de Challe is also a good place to see guanacos, the wild camelids of Chile, and they performed on schedule for my friends. I hope the guanacos

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Winter-Growing Bulbs from Seed in the Sonoran Desert

Leo Martin

Leo lives in Phoenix, Arizona, in the Sonoran Desert. Along with geophytes, he grows cacti and other succulents, fruits and vegetables, water lilies, and anything with a strong fragrance.—Ed.

Know Thy Situation

Gardeners need to figure out how to give plants what they need to grow and bloom and how to fit this into the gardener's calendar. I live in Phoenix, in the Sonoran Desert. I work a lot and can't check my growing area every day, and sometimes not for several days in a row. It might seem strange to grow winter-rainfall plants in the southwestern US desert, but I don't think it's hard, for reasons I'll explain. And I've found ways to raise bulb seedlings with less attention and time than some people devote.

What I Have to Work With

The Sonoran Desert extends south well into Sonora, Mexico; west to the Colorado River, Arizona's border with California; east to the

grasslands rising to the mountains between Arizona and New Mexico; and north until land rises to grassland about 50 miles north of here. Our yearly average of 8 inches (200 mm) of rain (14 in. [350 mm] in Tucson) falls 60 percent as drenching summer monsoon thunderstorms that are erratic and often only a mile in diameter. Summer rain usually begins in mid-July. The remainder of our precipitation comes gently in cool winter storms, arriving twenty-four hours after rain in Orange County, California. We usually get winter rain between late November and early March. Our winter rain is unusual for a summer-rainfall desert; most such deserts get no winter precipitation beyond dew.

Our summers are very hot, with days often over

110°F (43°C) and nights in the 80s (upper 20s C); winter days are mild, always above freezing, but up to a dozen overnight frosts to the upper teens F (-8°C) may occur from November to March. Spring and fall are dry, with humidity under 10 percent.

Changes of season are highly variable; we usually hit 100°F (38°C) in late April, but this can occur as early as the first week in March or as late as mid-June. Most years we have proper temperatures for winter-rainfall plants between November and March, with a 7.5-month-long hot period.

What the Bulbs Want

Most of the winter-growing bulbs we crave come from places with warm, dry summers, with days to per-



Here's a look at what Leo "has to work with"! These potted plants, photographed in February 2012, are growing over his pond. You can see the foam cups and foam coolers that Leo uses as growing containers. All photos in this article by Leo Martin.

haps 90°F (34°C) and nights much cooler. Winters are cool, sometimes with mild frosts at night. Rain begins in fall and continues to spring. From my reading I know that winter rain in southwestern Africa is usually reliable and dry spells don't last very long most years. Of course there

are outliers, but it seems to me rainfall is usually adequate for the plants. There is a lot of winter sunshine in habitat, shaded by shrubs and grasses under which bulbs grow. Air circulation is good and humidity is low unless it's raining. The dry period seems to last four to six months.

My Assessment

I have a longer, hotter summer, with some rain, which might rot dormant bulbs. I have erratic rain, not enough for most exotic plants, necessitating supplemental watering. My winters feature cool sunny days and low humidity interspersed with gentle rain, excel-

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Winter-Growing Bulbs from Seed in the Sonoran Desert (cont'd)

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lent for the bulbs. I live in a summer-rainfall climate but I also live in a winter-rainfall climate. I'm really lucky—I can sprout something every month of the year!

How I Do It

I will start with typical seeds that can be stored dry for at least a few months; later I will mention the immediate-sprouting amaryllids. During summer dormancy I plant containers with winter-growing bulb seed that I will not water for months. That way I will be ready to put them all out as soon as good weather arrives. I might sow 10 to 100 seedling containers during a relaxing summer evening.

Our winter sun may be hot, and our spring sun certainly is so. Dark plastic containers heat up during our days, even in December. To shield my seedlings from our hot sun, for containers I use foam drinking cups holding 20 or 32 US ounces (600 or 950 ml). These are twice as high as wide, good proportions for bulbs. I write on the cup with a black ballpoint pen and can read it for at least two years. (Blue ink fades in days.) I make holes with a butter knife. Foam cups are much less expensive than any plant container and can be bought in large quantities at a restaurant supply store. They last up to four seasons in good shape and much longer in a fragile state. Another benefit of foam cups is that bulbs let you know when they are ready to move: They break the pot!

For larger quantities of seed, I use foam coolers. A friend of mine is a plastic surgeon. Botulinum toxin for wrinkle injection and facial fillers are shipped cold or frozen, and busy plastic surgeons throw away a lot of foam

boxes. Outpatient surgery centers also get a lot of these; tendon and bone grafts for orthopedic operations are shipped frozen. If you know anybody who goes to a plastic or orthopedic surgeon, or works in such an office or an operating room, put in your request for coolers.

Because I can't look at my seedlings every day, and our relative humidity is usually very low, I need a soil mix that holds water but is root friendly. After a lot of dead seedlings, I've discovered common builder's sand suits the purpose. This is fairly coarse, prewashed, and screened, and usually has no weed seeds or any organic matter. This last is a big plus; constantly



The tools of Leo's trade: foam cups and builders' sand!

wet, high-organic soil mixes grow a lot of algae and moss during the winter, choking out the bulbs. Builder's sand is about \$2.50 for 40 pounds (about 18 kg). Sand is a locally-produced item in most parts of the United States, so it varies with your geology. If your builder's sand is beach sand, I would wash it carefully before use to remove salt. I don't know how coral sand would work—I have mixed rock sand.

I have noticed most bulb seed needs to get really wet for quite a while in order to sprout. I usually don't make drainage holes in my seedling cups at first. I add water so it

stands over the surface of the sand in the cup. When the seeds sprout I cut drain holes. Sometimes I do make drain holes at first, but then I stand the cups in trays of water so they stay very wet. With our winter sunshine, low humidity, and plenty of air circulation outdoors, I have never once had trouble with fungus or damping off, even though I keep my sprouting containers glistening wet at all times.

Bulb seed is best sprouted in fall, perhaps late September here in Phoenix. Days are in the 100s but nights range from the 70s into the 60s. If a rare early winter rainstorm arrives in October or early November, I will soak all the seedling containers. Established *Albuca spiralis* and *Oxalis meissneri* wake up first every year, telling me it's time to think about

watering seed containers and to pay close attention to other winter bulbs. Usually Halloween finds daytime temperatures in the 90s and nights in the 50s, and if there has been no rain yet, I will water for the first time that season.

During planting sprees, I first decide what I'm going to plant that session and enter

the information into my computerized database. I read somewhere that all great gardeners keep careful records. I'm not saying I'm a great gardener, but I do keep careful records. I learn a lot about what works and what doesn't and I can review it anytime my computer is working.

I label the cups in advance. Using a black ballpoint pen I write directly on the cup rim. I put the name and the date sowed. As mentioned, I rarely make drain holes in my cups. I partially fill the cup with sand. I put the seeds on the surface, then cover with more sand. I used to use white play

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Winter-Growing Bulbs from Seed in the Sonoran Desert (cont'd)

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sand for the covering, thinking it would make it easier to see the tiny green sprouts. But I can see them just fine, so I don't do this anymore. If I'm waiting to water, I put the cups in a cardboard box until fall. Otherwise, I fill the cup with water and stand it in the growing area.

Our direct winter sun is too harsh for bulb seedlings, so I put them in partial shade or where they won't get sun all day long. My carport is one good spot. I have a pond outside my front door with sides elevated 2 feet (60 cm) above grade. In winter I span

the pond with 2 in. x 4 in. (5 cm x 10 cm) boards, the standard size for framing buildings and readily available at building supply stores. I place plastic greenhouse benches, 4 ft. x 8 ft. (122 cm x 244 cm), across the pond on which to set my plants. The water here almost never freezes and keeps the plants above somewhat warmer than they would otherwise be.

After the first watering I keep new seed cups very wet for as long as it takes to sprout the seed. This might be weeks. When they are well up, I use a knife to cut holes in the cups for

drainage. I need to water about every three to five days throughout the winter. I begin fertilizing almost as soon as sprouts show. I want the bulbs to be as big as possible before the frightening first dormancy. Because my soil is pure mineral and my water has

lots of dissolved calcium, I need add only nitrogen. I use diluted ammonium sulfate, about 1/2 teaspoon per gallon of water (2.5 ml per 4.25 liter). I know everybody else says not to use high-nitrogen fertilizer on bulbs, but I think it works well. If I used a peat-based soil mix, it would promote wild overgrowth of non-flowering plants. In my low humidity I have almost no problem with algae or with moss.

During the coldest part of winter, December to mid-January, most bulbs slow down. As days lengthen and get slightly warmer in late January, bulbs resume growing again.

Spring comes in late January and might last two weeks or ten. I keep watering and fertilizing and take care on very warm days to cover seedlings with shade cloth. I collect seed to sprout next season or to send to Dell.

At spring's end comes first summer, when days are hot by most people's standards, but nights are nice and cool for a few weeks. I stop watering and

let things go dormant. When the cups are good and dry, I pack them away in cardboard boxes. I use what is sold here as banker's boxes, which come flat and must be assembled. Each holds sixteen 20-oz. (600

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Some of Leo's successes! Clockwise from top left: *Lapeirousia oreogena*, *Hesperantha vaginata*, and *Oxalis obtusa* Polished Copper. These plants all flowered in Feb. 2012.



Winter-Growing Bulbs from Seed (cont'd)

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ml) cups. I put the boxes away in the guest bedroom closet—nobody comes to visit in the summer. I have had quite a few things survive summer outdoors exposed to rain, but I don't like to chance it. Most survivors have been Karoo or Namaqualand bulbs; these areas can be very hot in summer and might get some summer rain on occasion. Lapeirousias seem especially tough in my summer climate.

Second summer arrives in mid-July, with higher humidity and monsoon storms. If you like massive electrical storms, you should visit in late July. I'd better have everything inside by now or it might get wet while hot. During summer I also pot up bulbs. I like to grow mature bulbs in larger, decorative containers. I add winter annual seed to larger containers because these shallow-rooted plants wilt before the deeper bulbs get thirsty.

In fall the cycle begins again!

I won't mention fungus other than to say I don't get it. I have never had any insect damage during growing season. My biggest animal problem is with curved-billed thrashers, birds that need to pull up every green sprout they see. Javelinas, native piglike animals, will knock over containers and go rooting. I had burrowing ground squirrels chew into boxes and eat bulbs when I stored them on the patio for summer. That is why they go into the guest closet. And this spring a visiting Giant Schnauzer jumped onto the sprouting cups and walked around.

Immediate-Sprouting Amaryllids

Immediate-sprouting (recalcitrant) amaryllid seed requires different treatment. It is available from African sources in our spring, the wrong time to plant. I have tried starting it indoors under lights in spring, but my house is too hot in the summer. So I put the seed packets into the refrigerator crisper drawer. Even tiny-seeded plants like *Hessea* last five months this way. I take them out every six weeks or so and look at them. If they look stressed, I soak them in cold water overnight, dry them completely, and put them back into the refrigerator.

As nights cool down in early fall, I plant recalcitrant bulb seed, but inside under lights. It's still too hot outside for winter-growers. I use foam containers, but a mixture of 75 percent good-quality potting soil to 25 percent sand. Pure sand is too hard to penetrate for these seedlings' roots. I keep them quite moist. With the head start they grow well their first winter. In late spring I try to bring them inside and keep them growing as long as possible before the first dormancy.

And that is how I do it!



Tenth Anniversary Get-Together

Nhu Nguyen

Nhu, the current president of PBS, is a mycologist who also loves plants and combines that passion with travel and photography. He is a graduate student at UC Berkeley and is also a painter. View his work on the Web at www.flickr.com/photos/xeranthemum.—Ed.

It was a hot spring day in Berkeley, much hotter than usual, when bulb enthusiasts gathered at the University of California Botanical Garden (UCBG) for a short but eventful meeting to celebrate the 10th anniversary of the Pacific Bulb Society. Folks came from all over the United States, from as far as the Northeast, the Southwest, and the Pacific Northwest, as well as from all over California. Several board members were present, including Dell Sherk, our BX director; Mary Sue Ittner, our Wiki and eList director; and Jane Merryman, our newsletter editor.

A full program of talks had been scheduled to lead off the day. However, since it was so hot, the consensus was that we should tour the South African Hill before the heat



In the foreground, Lee Poulsen (left) and Colin Davis (right) chatting in front of a display of *Moraea*. Mary Sue Ittner (far right) approaches to greet them. Photo by Nhu Nguyen.

reached its zenith. We split into two groups. One followed Paul Licht, the director of UCBG. Paul loves aroids and he showed his group some interesting and rare aroid species. I led the other group and the two met at the South African Hill, where numerous bulbs and other amazing South African plants grow in the ground. We enjoyed the sunshine and beautiful blooming plants, including sprays of *Babiana* species and delicate small flowers of various other geophytes.

Back at the conference room, Mike Mace spoke about *Moraea* and his successful hybridization techniques. Mike showed colorful photos of his hybrids, some of

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On the Bookshelf

Emilie Pulver

Emilie is a theological librarian at work and an urban botanist at play. She lives on the third floor of an older apartment building and grows most of her plants under lights. Some of her many interests are carnivorous plants, ant plants, succulent bulbs mostly from South Africa, aroids, aquarium plants, and scented geraniums. She says, "Also I collect books, mostly botanical rather than horticultural since the hort books do not help me on the third floor."

Plant form: an illustrated guide to flowering plant morphology. By Adrian D. Bell, with line drawings by Alan Bryan. New ed. Portland: Timber Press, 2008. 432 pages, 387 photographs, 1,062 line drawings.

This beautifully illustrated book is a perfect way to answer the perennial PBS question, What is a bulb? Moreover, every PBS member can use this book to develop a deeper appreciation of the complexity of all parts of the plants in their collections.

Plant morphology is the study of the exterior structure of plants, important not only for taxonomy, but for any botanical or horticultural investigation. This book is divided into two parts. The first contains morphological description, introducing the terminology of leaves, roots, stems, reproductive parts, seedlings, and vegetative propagation, with special sections on the morphology of grasses, sedges, orchids, and cactus and cactus lookalikes. The second section covers constructional organization, that is, the way plant organs are structurally accumulated, covering meristem position; meristem potential; meristem disruption; and plant branch construction (tree, herb, and liane architecture). While these terms may sound daunting, the book is a delightful way to investigate these concepts, either informally or in an organized way.

Each topic is discussed on a two-page spread in which text and photographs cover the left-hand side, and the right page contains the clean and clearly labeled drawings. Each of the more than 1,000 illustrations is referred to by the page where the topic occurs,

allowing extensive cross-referencing in the text; one can leapfrog through the book to follow an interesting concept. The 26-page bibliography is cross-referenced to the text, and the 38-page index contains both topical terms and plant species described in the text, with annotations indicating what features of that plant are described.

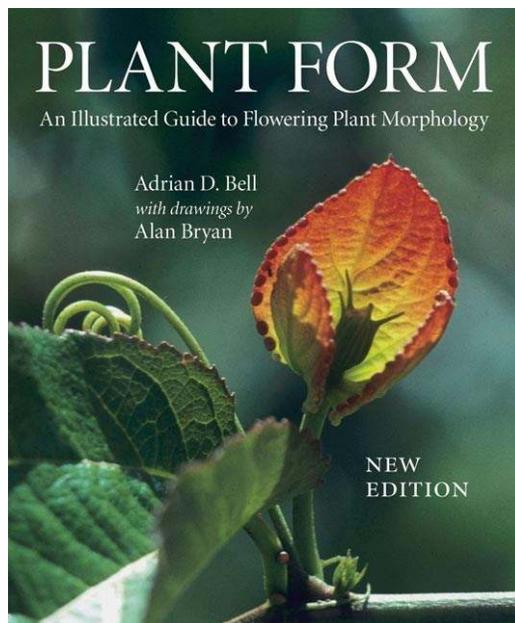
Thus, the topic "bulb" is discussed under leaf morphology. The text on the left-hand side gives a general definition and the differences between monocotyledon and dicotyledon bulbs are noted. Parts of the bulb are described, and a photograph of *Urginea* sp. appears on the left-hand page, showing how a row of accessory buds develops in the axil of each leaf. On the right-hand page are the line illustrations, with two exploded diagrams to illustrate bulb construction along with detailed drawings of (111G) *Allium cepa*,

section of entire bulb; (111H) *Dicentra cucullaria*, loosely organized swollen leaf bases; (111I) *Allium sativum*, longitudinal section of a single axillary bulb; and (111J) *Bowiea volubilis*, entire bulb. Cross-references embedded in the text refer to "adventitious roots"; "bulb-like structures"; "vegetative multiplication"; "sympodial series"; and "elongated stolon." References are given to items in the bibliography for further study. Similar outlines are given for "tubers," under root morphology; and "tuber, swollen stem," "rhizomes," and "corms" under stem morphology

Bulb lovers will find much more than this about their favorite plants. For example, *Iris pseudacorus* is used to illustrate leaf morphology (foliage leaves at distal end of rhizome); *Iris reticulata* to illustrate flower morphology (perianth segments in two sets of three); and *Arum maculatum* to illustrate monocotyledons (simple leaf with reticulate venation).

In sum, this book is a wonderful way to discover fascinating features of your plants you might not have noticed before and to add to your botanical and horticultural understanding.

Plant form is available in hard cover for \$49.95 at the Timber Press website.



Tenth Anniversary Get-Together (cont'd)

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which were quite unexpected. Next, Jacob Knecht spoke about his success and failures growing certain species of amaryllids like *Hippeastrum calyptratum* and *Worsleya procera*. Jacob showed photos of his plants growing in humid conditions, some even on mounts.

We enjoyed a potluck lunch expertly prepared by Marilyn Pekasky.

Finding shady spots to sit, we had a bit of time to chat and catch up. Some of us gathered around the display table to ooh and aah over the plants we brought for show and tell.

After lunch we had two more

speakers. Leo Martin from Arizona discussed the plants that he grows from seed. Finally, Richard Haard, of the Fourth Corner Nursery in Washington State, narrated a video showing nursery-scale collection and germination of native plant seeds for reintroduction.

After breaking up for informal dinner plans, some of us gathered at the University of California, Berkeley, for a slideshow by Mary Sue Ittner and Bob Rutemoeller. The presentation was put together by Alan Horstmann for the 2006 IBSA Symposium and included many beautiful photos of various South African genera. Music accompanied the photos for a relaxing evening.

The next day we carpoled to Mt. Diablo, an hour by car east of Berkeley. We hiked into Mitchell Canyon. Along the way we saw lupines, dichelostemmas, and delphiniums. Then from a distance, we heard a loud yelp. I knew right away that someone had found the focus of the day—*Calochortus pulchellus*. We gathered at the spot for photos and admired the beautiful fairy lantern, endemic to Mt. Diablo. Next we spotted beautiful *Allium serra*, some accessible for photography, some quite far away upslope.

After the excitement of finding geophytes in their native habitat, we drove up the mountain for lunch. We spotted a spectacular hillside of California poppies. After a picnic under the shade of oak trees, we headed to the top of the mountain where we took a loop trail around the summit. We found patches of *Lewisia rediviva* growing on the flaky red chert and a curly white form of *Allium falcifolium* with only the buds showing. We challenged ourselves to find the curliest of *Chlorogalum pomeridianum*—a difficult task

because it seems that each one is curlier than the last.

The meeting was a great success and I think everyone enjoyed themselves. We would have enjoyed more time to catch up with old friends and meet new ones; a third day would not have been inappropriate. I want to thank everyone who was involved, especially Paul Licht for his enthusiasm for this event and allowing us to use

the space at the UCBG. Many, many thanks go to Marilyn Pekasky, who spent the whole day in the kitchen prep area preparing lunch for us. Perhaps for the PBS's 20th birthday someone will plan a spectacular

symposium event. Until then, I highly encourage everyone to plan small events either locally or in conjunction with other plant societies. Meeting other bulb enthusiasts is a wonderful experience!



Above: *Calochortus pulchellus*, endemic to Mt. Diablo, is one of the most spectacular of the fairy lanterns. Right: *Allium serra*, a small California onion found in the mountains of central and northern California. Photos by Nhu Nguyen.



Treasurer's Report, Second Quarter 2012

BALANCE 4/1/2012	\$22,052.32
U.S. Members	\$220.00
Overseas Members	\$300.00
BX Receipts	\$868.24
Contributions	\$27.00
TOTAL INCOME	\$1,415.24
BX/SX Expense	(\$798.38)
Board Conference Call	(\$99.07)
Total Publications	(\$0)
PayPal Expense	(\$127.92)
Supplies	(\$0)
Postage	(\$525.25)
Investment Results	(\$383.11)
TOTAL EXPENSES	(\$1,933.73)
BALANCE 6/30/2012	\$21,533.83

A Bulb Tour in Northern Chile (cont'd)

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weren't dining on *Leontochir*, but they probably were.

Our next stop was Copiapó, a large town with devilish traffic, and our excursion was to Parque Nacional Pan de Azúcar, whose flora is most notable for its many cacti. After a second night in Copiapó we proceeded to the botanist's mecca of Taltal, a small town on a cove. I knew of only one hotel there and hadn't managed to obtain reservations, but fortunately another hotel had been reopened just down the street since I'd last visited, and we got good rooms off a courtyard.

There is a good coast road from Taltal north to the hamlet of Paposo, and almost everywhere along it

you can stop and see myriad fascinating plants. The best strategy is to walk up toward the seasonal drainages that come down from the nearby range of hills, where many desert plants burst into



Leontochir ovallei (inset) in its native habitat. Photos by Jane McGary.

growth in the years when the *camanchaca* (coastal fog) is supplemented by rainfall. On the flats between the road and the sea *Rhodophiala bagnoldii* lifted its bright yellow flowers on tall stems. We went a little north of Paposo, following the directions in our *Rutas y senderos* book (see Sources at the end of this article) to a canyon on whose bluffs we found *Rhodophiala laeta*, a species I had always wanted to see. Its short stems (up to about 8 in./20 cm) bear a few large, broadly funnel-shaped flowers of brilliant rose-pink, often posed prettily against the photogenic barrel cacti (*Copiapoa* spp.). The soil is a mixture of sand and broken rock.

Another excursion took us a bit inland along the road that departs from near Paposo toward Ruta 5. We parked in a turnoff where a power line came down from the hills (a large sign assured visitors that the power company was doing its best to protect the environment) and walked up a partly washed-out dirt road to a high point from which a fine view of the sea appeared. Another kind of sea flowed up the hillsides in the form of blue *Nolana*, a mostly annual genus with many species in northern Chile, almost all with pure blue flowers reminiscent of petunias. It's hard to understand why nolanas aren't grown in more warm-climate gardens—I can think of few more beautiful displays of blue, from near-cobalt to pale sky, and a few pure white or lavender species as well. On this hike Gene reached one of

his goals for the trip, a sight of the Giant Hummingbird, probably there to feed from the Giant Tobacco, *Nicotiana solanifolia*, a startling sight in the desert with its tower of huge leaves and big green flowers. We moved on to the

small but bustling town of Illapel for a day at Reserva Nacional Las Chinchillas. I stumbled on this small, little-known reserve during my first trip to northern Chile, just seeing the sign on a road where my companion, a geologist, had insisted to go to look at rocks. The reserve is quite fascinating, having been established to protect the chinchillas, a different species from those farther north in the Andes that were sources of precious fur. The resident rangers maintain a little indoor zoo where some chinchillas and other native rodents are kept in dim light conditions suitable to their nocturnal habits, and visitors enjoy a brief tour and talk about the

(continued to next page)

A Bulb Tour in Northern Chile (cont'd)

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animals. The reserve contains a number of different habitat types, including dense woodland and large shrubs (many were in showy bloom during our visit), and a steep but well-maintained loop trail takes you through different plant communities. The bulb excitement here was *Placea amoena*, the northern Chilean representative of a small genus of very showy amaryllids, growing among grasses and herbs on very steep upper slopes. After plenty of photography, we had our lunch at the visitor center and met some schoolchildren on a field trip; two boys traded Facebook information with Diane, whose iPod was a frequent assistant all during the trip.

Heading back toward Santiago and the airport, we

stopped in the large foothill town of Los Andes and drove up the innumerable switchbacks toward the pass into Argentina so my friends could get

just a glimpse of the higher mountains. The heavy snowfall meant that no flowers were in evidence up high, and we had tea in one of the ski hotels, gazing onto a lake still covered with ice.

My last day of the trip (Diane and Don continued on to a few days on the central coast and a stay in Ecuador, and Gene had another day or two in Santiago) took us in the morning to Parque Nacional La Campana, in the hills near the central valley, popular as a place to walk through groves of the Chilean wine palm (*Jubaea chilensis*). It isn't as rich in flowering plants as some other parks we visited, but we spotted the inland form of *Aristolochia chilensis* with its marbled leaves and curious fur-lined flowers.

I can't get enough of flowering deserts, and I'll always be watching the rainfall records, especially now that I'm retiring and will be better able to travel on short notice.

Not many of the plants we saw on this trip are subjects I can grow in Portland, Oregon, even in the covered "bulb house," but like my friends, I have a treasury of photos to recall the memory of the *desierto florido*.

Sources

Seed of many Chilean plants is sold by Chileflora, www.chileflora.com. An APHIS Small Lots of Seed permit is required to bring these seeds into the United States.

The best currently available book on the flora of northern Chile is *Flora nativa de val-or ornamental: Chile Zona Norte*, by Paulina Riedemann, Gustavo Aldunate, and

Sebastián Teillier. It includes a large paperback manual of the plants with descriptions, ranges, sites to see them, and cultivation tips, and a small paperback *Rutas y senderos* (roads and trails) with suggested drives and hikes. This book is part of a series, all of which are hard to obtain; try British booksellers with a natural-history specialization first. I probably shouldn't mention this in public print, but I have translated the *Rutas* volume into English and can e-mail a copy to those who need it.

Information on Chilean parks and preserves is available at www.conaf.cl (CONAF, Corporacion Nacional Forestal de Chile). Be sure to check before planning your trip, because some of the many sites are not open all year, or on all days of the week. A small entrance fee is charged at each park. Some have botanically knowledgeable rangers on site, and at Fray Jorge you can sometimes arrange a guided walk with a botanist.



Clockwise, beginning top left: *Placea amoena* (photo by Eugene Zielenski), *Aristolochia chilensis*, and *Rhodophiala bagnoldii* (photos by Jane McGary).



Gardening with Bulbs



This *Tropaeolum tricolor* was enough to make us jealous of Jane McGary's trip to Chile. But just wait until you read about the rest of her adventures! Photo by Eugene Zielenski.

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