Winter, 2012

The Bulb Garden

~Gardening with Bulbs ~

Volume 11, Issue 1

What's Inside...

Fun with *Moraeas*

Mike Mace

Mike is one of the volunteer administrators of the PBS Wiki. He lives in San Jose, California, where he gardens on a half-acre hillside of heavy, rocky clay infested with gophers, two feral cats, and a couple of nearsighted Boston terriers.—Ed.

What's the world's most beautiful flower bulb?

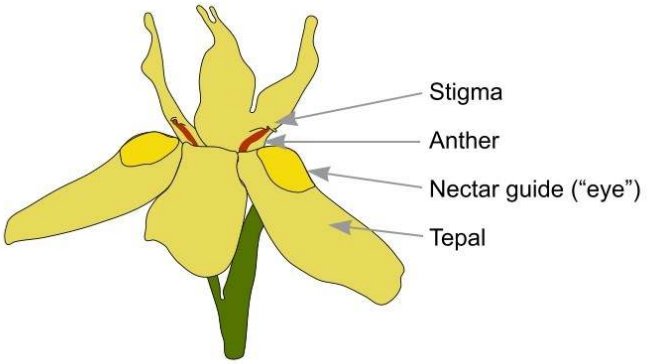
It's a difficult question. If you held a vote of the general public, most people would probably vote for something common, like a tulip. A specialist might argue for the incredible detail of *Calochortus venustus*, or the unearthly features of *Geissorhiza radians*, or maybe the geometric precision of *Romulea amoena*.

And then there are the *Hippeastrum* enthusiasts . . . .

I can't even decide for myself which bulb I think is most beautiful, but to me the best combination of beauty, variety, and ease of cultivation comes from the moraeas.

If you're not familiar with the genus *Moraea*, they're *Iris*-related corms from Africa. In bloom they look a bit like beardless irises. Some are summer-growing, but most come from the winter-rainfall parts of South Africa. The showiest of the moraeas are a group of winter-growing bulbs informally called the "peacock" moraeas, because they have developed very bright contrasting colors, apparently to attract beetles as pollinators.

My favorite of the peacocks is *Moraea neopavonia*, a burning orange flower with a bright blue eye on the tepals and leopard spots in the center. I first saw a picture of it a decade ago, and still can't believe anything so outrageous grows in nature. That was the plant that got me started with moraeas, but I quickly learned of the variety of peacock flowers to choose from. I think some of the best are:



M. aristata. Almost extinct in the wild, it is white with a vivid blue and purple eye.

M. gigandra. Relatively large flowers for the genus (up to about 2.5 inches across; 6.25 cm), colored purple with a narrow bright blue eye.

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Fun with *Moraeas* (cont'd)

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M. loubseri. Another extreme rarity, it grows in a single spot where a couple of flowering plants are seen every few years. Fortunately, it is easy in cultivation. Purple flowers and a dense hairy black center.

M. villosa comes in a range of colors from purple to white to orange or yellow, with a vivid contrasting eye. Although you can see a lot of different color forms of *M. villosa* in photos online, I'm told by folks in South Africa that only the purple ones are commonly seen in the wild.

M. neopavonia. Now viewed as a synonym with *M. tulbaghensis*, which has a greenish eye instead of blue. The merger of these two species is controversial among *Moraea* growers, as the species have different flower shapes and (in my garden) require somewhat different treatment.

I also grow several moraeas that aren't generally considered to be peacocks, including:

M. atropunctata, which has cream-colored flowers with brown freckles.

M. polystachya, which is blue and yellow, and blooms vigorously for four-plus months in my garden. It's not the most beautiful *Moraea*, but is the most abundant bloomer of any bulb I grow.

Of these, the easiest for me to grow are *M. villosa, aristata,* and *gigandra*. They don't resist gophers in the ground, but otherwise, if you keep them dry in summer, they'll generally survive abuse and will multiply rapidly if you make them happy.

There's a lot more information about these plants on the PBS Wiki, including a guide by Bob Werra to the many species he's grown. I encourage you to check it out: http://pacificbulbsociety.org/pbswiki/files/Moraea/Mad_about_Moraeas.html.

It's a lot of fun growing these bulbs, but eventually, as my collection matured, I ran out of new challenges. I had most of the attractive winter-growing species. There were several other beautiful species that I wanted, including *Moraea insolens, M. villosa ssp. elandsmontana*, *M. caeca*, and *M. amissa*. But those are all more or less unobtainable. So I didn't have anything new to grow.

Making New Moraeas

Then I saw tantalizing hints online about *Moraea* hybrids. Bill Dijk in New Zealand produced a stunning plant called 'Zoe', with huge purple tiger stripes on it. Arthur Dawson posted pictures to the PBS Wiki of some accidental *Moraea loubseri* hybrids in a variety of colors, and Dennis Kramb has posted to some other sites a few tantalizing photos of *Moraea* hybrids. Dirk Wallace also put some beautiful hybrid photos on his BG Bulbs website, including this one: http://www.bgbulbs.com/cpt/displayimage.php?album=26&pos=9.

So I decided to try making my own *Moraea* hybrids. I'm still at the beginning of that process, but the results so far have been fun. I wanted to share what I've been learning.

Above: the results of *Moraea atropunctata* crossed with *M. calcicola*. Facing page, top: the result of crossing *M. atropunctata* with *M. neopavonia*. Both strips: photos by Bob Rutemoeller, Bob Werra, and Michael Mace, respectively. Facing page, bottom: the result of (*M. atropunctata* x *neopavonia*) x *M. villosa*., photos by Michael Mace, Bob Rutemoeller, and Michael Mace.

According to Peter Goldblatt's book *The Moraeas of Southern Africa*, most of the peacock flowers share the same chromosome number, 2n=12. In my limited understanding of genetics that should mean it's relatively easy to cross them, and in practice that's what I've found. Most of the peacock moraeas I grow seem to hybridize readily. Here are some of the crosses I've made, plus comments on them:

Moraea aristata x calcicola. This is a purple species crossed with a white one. The result is an average between the two flowers: light purple, with a relatively small eye that's very dark blue, almost black. These hybrids produce relatively little pollen, so I haven't had much luck crossing them with each other.

Moraea atropunctata x calcicola. This one is a

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Fun with *Moraeas* (cont'd)

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delight. The brown freckles of *M. atropunctata* are turned purple, and the plants bloom vigorously. Several of these selections also have a good supply of pollen, so I've been able to make some follow-on crosses with them (none of those have bloomed yet).

Moraea neopavonia x villosa. This one bloomed for me for the first time in 2011. It was like a championship boxing match. Which of these heavyweight moraeas will dominate, the purple one or the orange one? Or will they be a weird mix of both colors? The answer is that the orange color dominates. The flower has the broad tepals of *M. villosa*, but the color scheme is mostly *M. neopavonia*, with a pure black eye. Since *M. villosa* is polyploid (2n=24), this hybrid should theoretically be difficult to cross with other moraeas. But it set two good-looking pods last spring. Ask me in three years and I'll tell you how they turned out.

Moraea neopavonia x atropunctata. This was my first successful cross, and I've always been uncertain of it because it looks so much like plain old *M. neopavonia*, although with slightly lighter tepals and a hairier center. However, some of its offspring have *M. atropunctata* features, so I think it probably is a real hybrid (see above).

(M. neopavonia x atropunctata) x villosa. The hybrid above was crossed with *M. villosa*, and the result was spectacular. One offspring was big and pale orange with only a small eye, but the other has a huge vivid blue eye and purple freckles (apparently from *M. atropunctata)* on the backs of the tepals. This selection blooms and offsets vigorously. I hope that in a couple of years I'll have enough offsets to share some on the BX. The flowers also appear to be at least partially fertile, although there hasn't been enough time to grow any of the seeds to flowering yet.

(M. neopavonia x atropunctata) x aristata. This was another pleasant surprise. Most of the offspring were fairly uninteresting, pale orange flowers with small blue markings. But one was like a light yellow version of *M. aristata*, very nice looking. None of these produce useful amounts of pollen, but they do offset vigorously, so I hope to be able to share them in the future.

Hybrids That Didn't Work

I've tried repeatedly to make hybrids between the peacock species and *Moraea polystachya* to get the vigor of *M. polystachya* in different colors. I hoped this might work because they have the same chromosome number, but so far none of the crosses have been successful. I will keep trying, but at this point I think *M. polystachya* is just too distant genetically from the peacocks.

I have also tried several crosses between *Moraea* and various species of *Dietes* (or, as I think of it, "the parking lot flower" because it has been used to landscape almost every parking lot in California). In general, those crosses fail. That's a shame, because I'd like to get California's parking lots landscaped in more than white- and cream-colored flowers.

Growing Hybrids vs. Growing Species

I know that, to some bulb collectors, the idea of growing hybrids is a form of heresy. If you're trying to conserve species through cultivation, you shouldn't distract yourself with man-made crosses. But to me there's synergy between growing hybrids and growing species. When I was growing only species, my collection quickly became static. I grew mostly the same things every year, so there wasn't much challenge to keep me interested. But now with new hybrids blooming every year, I stay interested, and I actually have more energy for maintaining the species.

I do feel, though, that if you're growing hybrids you should take some special steps to make sure your species collections don't get polluted genetically. I've read comments online that some of the *Moraea aristata* bulbs circulating in captivity are suspected to actually be hybrids. I can see how that could happen. Although I live thousands of miles away from the beetles of South Africa, I find that many *Moraea* flowers are

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IBSA Symposium 2011

Rachel Saunders

Rachel has a PhD in Microbiology and has worked in a research lab and lectured at the University of Cape Town. She and her husband, Rod, own Silverhill Seeds and Books, specializing in selling seeds of native South African flora. She has been on the IBSA committee for a number of years and is currently treasurer. Rachel and Rod walk in the mountains as much as possible and are avid photographers, particularly of bulbous plants. The SW Cape is an ideal place with many mountains and many members of the Iridaceae.—Ed.

The fiftieth anniversary of the Indigenous Bulb Association of South Africa (www. safricanbulbs. org.za) was celebrated during the 2011 symposium held from August 28 to September 2 at Goudini Spa, a natural hot spring resort near Worcester. About 60 delegates attended, including 12 from overseas, a smaller number than previously—a sign of the economic downturn, I suppose. Cape Town and the surrounding areas had received adequate rain this winter, whereas Nieuwoudtville and the Karoo had received excellent rain, and this meant that the symposium field trips would be especially interesting. Due to a hot, dry spell in late July and early August, the annuals were flowering early and good flower displays were evident in July.

Goudini Spa. Conference facilities sit atop the mountain, surrounded by cottages where overseas visitors stayed. Photo by Kath Baker.

The symposium proceedings began on Sunday evening with registration and a finger supper at the conference venue. This was our first visit to the new venue, and it is most impressive. Built high on a hill, it has a superb view over the Worcester Valley. The surrounding vegetation had been cleared as a fire break, and many bulbous plants were in full flower right outside the windows.

On Monday morning we began at 8:30 with a welcome speech by Alan Horstmann, the IBSA chairman. He was followed by Rod Saunders who presented an introduction to the Iridaceae in South Africa, illustrated with many slides. SA is home to more than half the world's Iridaceae and about half the genera. John Manning then spoke on "The Botany of the Genus *Freesia*" (the title of his latest book), showing paintings and slides of all 16 species. The book is illustrated with beautiful paintings by Auriol Batten, an amazing artist of 93 years of age. After tea Alan discussed and illustrated about 35 of the 70 or so species of *Romulea*, showing corms, leaves, and flowers, and he emphasized the importance of corm shape for identification purposes. I spoke on the taxonomy of *Gladiolus*, a genus with about 168 South African species, and discussed the diversity within the genus. I illustrated this diversity in flower shape, leaf morphology, and corms by showing pictures of a wide range of species from all over South Africa. Anthony Hamilton spoke about two *Gladiolus* species found in the UK—*G. byzantinus* and *G. illyricus*. He dispelled some myths about these species and traced their history in the country.

After lunch our first speaker, Vicki Thomas, gave an extremely interesting talk titled "Drawing out the Detail." Vicki, the daughter-in-law of the late Margaret Thomas, one of the founders of IBSA, is a botanical artist, and she gave us some background to botanical art, showing us how it has changed through the years. She then spent some time showing us how she paints plants and flowers—a fascinating process. She was followed by Ernst van Jaarsveld who gave a well-illustrated talk on the "Flora of Southern Angola." Ernst is the horticulturist in charge of the succulent collection at Kirstenbosch Botanic Garden, and he has visited Angola on several botanical expeditions. His main task on these trips has been to document the cliff-dwelling succulents and bulbous flora on the Angolan escarpment. This area has many geophytic species, the majority of which are Hyacinthaceae. Allan Tait was next with an interesting account of the summer-rainfall species of *Zantedeschia*. He described and illustrated six species, showing many habitat photos, and he also discussed cultivation of and threats to the plants. Our final speaker for the day was James Hitchmough from the UK who is involved in landscaping in the British urban space, including the 2012 London Olympic site.

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IBSA Symposium 2011 (cont'd)

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He entertained us most flamboyantly, showing his unusual but extremely successful landscaping techniques that use many hardy South African plants. He certainly kept us all awake—a mean feat late in the afternoon. After dinner Cameron McMaster gave one of his excellent slide shows on Eastern Cape orchid species.

On Tuesday we again began at 8:30 with Roger Dixon speaking about "Relationships in *Clivia*." Roger has unconventional views on *Clivia* taxonomy and he kept us highly amused through his well-researched talk. The oldest taxa of *Clivia*—*C. mirabilis* and *C. nobilis*, are genetically quite distinct, but as one travels east and north of the *C. nobilis* habitat, many phenotypes are found and the taxonomy becomes confusing. We then had two speakers from the UK—David Victor and Bill Squire. David spoke about "Pelargoniums for Bulb Growers" and described some of the many beautiful geophytic species of *Pelargonium*, which grow in exactly the same way as bulbous or cormous plants. He grows many species and his talk was well illustrated with pictures of some of his cultivated plants. This was followed by Bill's talk on "Growing SA Bulbs in Southern England." Bill experienced every speaker's nightmare—the CD on which he had saved his talk was empty! If I had been in his shoes, I would have made my apologies and disappeared, but Bill gave us an excellent talk with no illustrations. His main regret was not being able to show us the Exbury Garden *Nerine* collection, all grown under glass in Southern England. If we had given a medal for bravery, Bill would have won it.

Gladiolus alatus **(top, by Kath Baker) and** ***Romulea komsbergensis*** **(by Rod Saunders) thrive in their natural habitat.**

After morning tea, Dee Snijman, from the Herbarium at Kirstenbosch, spoke on the family she is working on at present, the Hypoxidaceae, "Cape Stars." Most Hypoxidaceae have a star-shaped flower and none have floral nectarines, so pollen is the only reward for pollinators. She was followed by Hildegard Crous who talked about "Growing Disas—A Few Myths Dispelled." Hildegard lives in a Little Karoo town called Barrydale, about 200 km (124 miles) from Cape Town, and she has a small tissue culture lab where she propagates orchids. She has little time for fussing, and because she has a passion for horses, she has access to lots of horse manure. She thus showed us some extremely unconventional but successful methods of growing disas using horse manure and tap water!

Following Hildegard was Gordon Summerfield's talk on *Gethyllis*. The genus *Gethyllis* presents several problems—there is no published literature, and the growth cycle makes it difficult to study. When the plants flower in late spring or in summer, there are no leaves. Nor are there leaves when they fruit. Thus one never sees leaves, flowers, and fruits together. Gordon showed us a large number of images of his cultivated plants in flower, fruit, and leaf. After lunch, Alan Horstmann led the discussion on the plants on the display tables. The four tables were extremely impressive, laden with flowering plants of every South African bulbous family and genus. The tables were arranged along the windows of the conference room, which ensured enough light and warmth to induce most of the flowers to open. The display included

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IBSA Symposium 2011 (cont'd)

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Babiana, *Romulea*, *Gladiolus*, many *Gethyllis* plants in leaf, *Spiloxene*, and many more.

The final talk of the day was given by Cameron McMaster, "Interesting Summer Rainfall Bulbous Flora." Cameron travels extensively through the Eastern Cape and photographs everything he sees, from flowers to butterflies to birds. His photography is excellent and his presentations are always of great interest. After dinner, John van der Linde presented a short show on the Galapagos Islands, and Alan Horstmann gave us one of his impressive music and slide shows, "Gems of the Cape."

The weather on Monday and Tuesday had been perfect—sunny and warm with not a breath of wind. Field trips were scheduled for the next three days, and we woke up Wednesday morning to howling wind and pouring rain. We got onto the bus in our rain gear, not at all optimistic about our chances of seeing anything, let alone photographing anything. We visited four sites close to Worcester and between Worcester and Tulbagh. Miraculously, it poured rain while we were travelling, and each time we arrived at a site the rain stopped, the clouds parted, and the sun came out. All the sites had burned the previous summer so the bulbous flora was spectacular. We had a marvelous day viewing sheets of *Babiana villosa*, *patula*, and *melanops*; *Moraea villosa*, *Geissorhiza inflexa, Lachenalia stayneri*, *Sparaxis villosa, Freesia refracta*, *Gladiolus alatus*, *Romulea setifolia,* and many other species. By the end of the day, our bodies and clothing were pitch black—a disadvantage of visiting burn sites, and after a quick shower and change of clothes, we were taken by bus to the Slanghoek Resort for an excellent wine tasting followed by a *braai* (barbecue).

Seen at Malmesbury: above, *Babiana blanda,* photo by Rod Saunders; below, *Sparaxis villosa*, photo by Rachel Saunders.

Thursday started off with better weather, but this deteriorated as the day went on and we ended up with an icy howling wind and lots of cloud. We drove a longer distance to Malmesbury and Darling and started the day with an olive tasting on a farm near Darling. This area was drier than Worcester and the flowers were not as impressive as the previous day, but we still saw many species, including *Babiana rubrocyanea* and *blanda* (both highly endangered), *Gladiolus alatus* in sheets, *Ixia scillaris*, *Moraea galaxia* in all the damp areas together with various *Drosera* species, *Ixia lutea*, and many others. That night at the symposium dinner the food was good, the wine flowed, and the noise levels were impressive.

On Friday morning the weather deteriorated even further and it poured with rain. Twelve of us visited the Karoo Botanic Garden, but icy driving rain cut short our visit. Many of us then drove to Middelpos via the Komsberg where we spent two nights with Cameron's post-symposium tour participants at the Middelpos Hotel. The flowers there were spectacular and we saw sheets of *Romulea monadelpha* and *komsbergensis*, both red and yellow forms of *Daubenya aurea*, some very beautiful *Babiana cuneata*, impressive displays of gazanias along the road, plus many other species.

It was a fitting end to a successful symposium and IBSA should be proud of their achievement. Many people worked hard to make the symposium a success—and a success it was, thanks to them and to the delegates who gave up their time and money to attend. We all made new friends and contacts and we all learned a lot about bulbous and cormous plants.

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Fun with *Moraeas* (cont'd)

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very attractive to our local honeybees. The other day I watched a bee systematically assault a dozen *M. polystachya* blossoms, at one point even forcing open a bud so she could crawl around inside it. No wonder virtually every *M. polystachya* flower here sets seed. I have gradually realized that to prevent accidental pollination like this, every *Moraea* flower that I want to breed has to have not just the anthers removed, but also the tepals, so visiting insects won't rub pollen against the stigma (see above). This makes me feel like a barbarian, but it's the only way to ensure that I get real hybrids.

This also means that if I want to share species seed, I need to rip off the tepals and anthers and hand-pollinate some flowers with pollen from the same species. It's inconvenient, but I think it's required if I want to be a responsible grower.

What's Next

I got excited by my progress, and so last spring I made more than 100 *Moraea* crosses. In addition to making crosses between the flowers above, I also crossed them with species including *M. gigandra, tulbaghensis* (the green-eyed form), *loubseri*, and several of the former genus *Homeria* that are now classified as *Moraea*. I didn't expect any of the *Homeria* crosses to work, but a surprisingly large number of them set seeds (although I'm worried that the bees may have interfered there despite my best efforts). Most of these hybrid seeds have already sprouted this winter.

Targets for hybridizing this season include *Moraea barnardii* (a beautiful little thing, white with blue spots) and *M. bellendenii* (a large plant with yellow flowers). I'm also hoping to do some crosses with *M. lurida*, a fairly ugly-looking flower that's usually colored pale yellow and maroon. There are some variants that have beautiful orange or cream or even purple flowers, and I'd love to find a supplier for those. But I think even the common forms might be useful for hybridization because they have complex markings. There's only one way to find out . . . .

The bad news is that at this rate I'll be adding a hundred new pots a year to my collection indefinitely. I don't know how I'll find the time to repot everything. Suggestions are welcome. I'd also welcome advice on how to run a proper hybridization program. I'm not a botanist, so I'm relying on guesswork, information available online, and advice from a few people on the PBS mail list.

Above: a bee forces its way into a *Moraea polystachya* bud. Below: the steps Mike takes to ensure that pollinators can't interfere with his hybridization experiments. Photos by Michael Mace.

I'd be happy to correspond with anyone who's interested in moraeas, whether hybrids or species (mikemace@att.net). And if you know where to obtain some of those unobtainable moraeas, or even just pollen of them, I'll trade you some hybrids.

Sources

If you want to grow your own moraeas, there are several suppliers listed in the PBS Sources list: http://www.pacificbulbsociety.org/pbswiki/index.php/Sources. Some of the biggest selections are from Silverhill, Summerfield, Telos, African Bulbs, and Bulb' Argence.

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From My Point of View

Marguerite English

Marguerite's garden is in Descanso, California (east of San Diego). During her busy days she seeks out her garden for a little solace.—Ed.

The greenhouse flourishes with many containers of green shoots popping up into the chilly air. Again, I thank all of you who have donated your surplus bulbs and corms to the BX. My bulb collection would be far less attractive without your contributions.

I ordered bulbs from several BX offerings this fall and finally got the last one planted by Thanksgiving. Only one of the new arrivals has bloomed so far. Unfortunately, I ran out of room on the bench and stacked some of the newly planted containers. *Lachenalia rubida rubrum* was the first to bloom during December, but the plant looks odd with its long stalk growing through another container that I mistakenly placed on top of the first. As soon as it showed a bud, I realized the problem and quickly found open space for the other containers I had stacked. I am anxious to see which blooms show up as the winter progresses.

Heterophyllus arbutifolia **provides a bit of winter color. Photo by Carole Dearman.**

Just after I submitted last quarter's column several plants that I had been experimenting with showed up in the yard. I thought they were lost after I moved *Lycoris radiata* and *Rhodolphiala bifida* into a planting bed outside. They finally did bloom in early November, as did *Sternbergia lutea* and *Lycoris squamigera.* I will continue moving some of the less tender bulbs outside next summer.

Outside, the weather has left the garden barren. I find only a few sparse blooms on the passionflower vine—the butterflies have all left the neighborhood or are in hiding. One pink marguerite is still brightly blooming by the gate. It is well past time to prune the dried foliage from all of the other plants.

There is one glorious bright spot in the neighborhood. *Heterophyllus arbutifolia* (Toyon or Christmas berry), a common local native, is flaunting its bright red berries all along our country roads. Shortly they will get ripe enough for the waiting coyotes and disappear into hungry bellies almost overnight.

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Book Review

Pamela Slate

Pamela is currently secretary of Pacific Bulb Society.—Ed.

The Kew Plant Glossary: an illustrated dictionary of plant names. By Henk Beentje, with illustrations by Juliet Williamson. Royal Botanic Gardens, Kew, 2010. ISBN 978-1-84246-422-9. Paperbound, 160 pp., $30US or less. www.kew.org.

"If language is incorrect, then what it said does not agree with what was meant, and if what is said does not agree with what was meant, what is to be done cannot be completed" (Analects of Confucius, circa 400 BCE). Appearing on the first end sheet inside the cover, this quote establishes Beentje's primary intent—to reduce misinterpretation of plant descriptions and to clarify them.

In reading the introduction, one gets a clear sense that Beentje truly enjoyed poring over the 76 references and websites listed in the bibliography as well as the countless discussions with experts at Kew Gardens and around the world. No stranger to glossary writing, Beentje builds on his collaborative work with Martin Cheek in compiling the glossary for the *Flora of Tropical East Africa* (2003) with its 2,377 terms. The result is an easily transportable volume of 4,144 terms, with 735 excellent illustrations highlighted in a pale green in the main glossary, plus an additional 650 (or so) in tables of specialized terms following it. Without a doubt, this book accomplishes another of its purposes, ease of use.

Beentje's book "is intended for people who work with plant descriptions, plant identification keys, floras, monographs, revisions and field guides"—in other words, for those PBS members who read not only all of these references, but also the vast quantity of technical information found on our wiki.

And what does it *not* intend to do? This is spelled out clearly and logically. Colloquial terms, soil science terms, archaic terms of 50 or so years ago, habitat and vegetation types, and so on, are not found here, although references are provided for readers who can

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Board of Directors Meeting, January 2012

All attended the first meeting led by President-elect Nhu Nguyen. We welcomed new Vice President John Wickham and E-list/Wiki Director Mary Sue Ittner to the board.

Treasurer Arnold Trachtenberg reported that our account is enjoying the market's resurgence. Most members' BX accounts are in good standing, and the recent group book order for members has provided an economic boost for the treasury while offering members a valuable book at a price far less than they would pay to ship a single book from overseas. The board hopes to offer another member group purchase when a book of similar interest is available.

Membership Director Jane McGary informed us that of the 292 members of PBS in 2011, only 134 had renewed. AT will be sending postcard reminders to non-renewed members. If you haven't had a chance to renew yet, please do so! Remember you can pay online using PayPal.

E-list/Wiki Director Mary Sue Ittner reported that we have 583 people signed on to the e-list, a number which is in constant flux.

BX Director Dell Sherk had almost completed the end-of-the-year seed sale; he reported on his efforts to ensure that it reached both online and nonline members. The notices that he sent out resulted in very positive responses. Finally, the board unanimously approved DS's plan to include postage costs in the price assigned to each plant, a change that is necessary due to the rise of postal rates beginning Jan. 22.

New VP John Wickham and Secretary Pamela Slate are working to revise the Articles of Incorporation and By-laws as we move forward in pursuit of incorporation. The board unanimously supported the suggestion that this committee employ a California-based company that has been recommended as a reliable and reasonably-priced third party to assist the board to develop appropriate document language and file the necessary documents at the appropriate time.

We also agreed to pursue the archiving of *The Bulb Garden* in .pdf format. An e-list member who is also a graphic artist has volunteered to assist the board in the development of a new logo, offering the board the chance to provide input. We discussed our means of outreach to members who have not subscribed to the e-list and prefer to communicate without computers.

At our next meeting, we will discuss: the possibility of establishing an online database with member contact information (access limited to board members only); the need to create a policy book so that all PBS rules and standard practices can be referenced in one place; and the desire to create a packet of information that would, in the future, be given to each new board member.

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Treasurer's Report, Year End 2011

BALANCE 1/1/2011	**$17,939.07**
U.S. Members	**$3,280.00**
Overseas Members	**$1,550.00**
Contributions	**$328.00**
BX Receipts	**$11,101.60**
Investment Results	**($563.50)**
TOTAL INCOME	***$15,696.10***
BX/SX Expense	**($3,036.33)**
Board Conference Call	**($458.52)**
Internet Registration	**($194.00)**
Total Publications	**($6,575.20)**
PayPal Expense	**($739.72)**
IBIBLIO Donation	**($250.00)**
Supplies	**($189.27)**
Postage	**($3,289.88)**
TOTAL EXPENSES	***($14,732.92)***
BALANCE 12/31/2011	**$18,902.25**

Book Review (cont'd)

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then find them in other, more appropriate glossaries.

Some of the more interesting aspects of the volume are the editorial notations indicating whether a term is obscure, not recommended, rarely used, or unusual. For example, "**gladiate**, sword-shaped, long and narrow with an acute apex [obscure form]" and "**rhizogenic**, producing roots [unusual term]." Obviously, Beentje has researched the current general use and has provided it to his readers with these helpful notations.

This book is thorough. It contains symbols, suffixes, prefixes, abbreviations, illustrated grouped terms of more plant parts than other glossaries, a nice drawing of the Raunkier system, and even two pages of color plates accompanied by references and the usual disclaimer about subjectivity of color names.

A gift from a botanist friend, this volume has quickly displaced the others on my bookshelf and, when I read technical monographs, it sits nearby. Beentje has called for "constructive criticism," indicating potential for future refinements, but I, a student of botany, agree with him when he says "this glossary is what I would like to have on my desk . . ." for certain tasks and he has every reason to be pleased with his efforts. For more information, see: http://kewbooks.com/asps/ShowDetails.asp?id=845.

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California Adventures: Geophytic Discoveries of Mount Diablo

Nhu Nguyen

Nhu 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/xerantheum. Nhu is currently president of Pacific Bulb Society.—Ed.

Mt. Diablo is the field trip destination for the next PBS get-together in northern California. I hope that this article will entice you to join us for what I think will be a very fun event, described elsewhere in this issue.

Situated between Oakland and Stockton is a small range of mountains with Mt. Diablo being the tallest peak. The mountain measures 3,849 feet (1,173 m) high and resembles a volcano because of its rapid rise out of somewhat flat land. Private land surrounds most of the mountain range, but Mt. Diablo itself is within Mt. Diablo State Park and protected from such activities as rock mining. It marks the southern limit of the natural range for some plant species and the northern limit for others. This is one of the many reasons for protecting the ecological treasures that dwell on it.

My focus in this article is the many interesting and beautiful geophytes that live on this mountain. One of the necessary spring (end of April) pilgrimages for bulb lovers is a short walk on an easy trail from the northern entrance of the park into Mitchell Canyon. To the left is a small stream that is mostly impassible because of poison oak, and to the right is a precipitous slope that only the park's many reptiles can climb. Oak trees shade most of the slope, but in areas of clearing species of *Dichelostemma*, *Delphinium*, *Allium serra*, *Sisyrinchium bellum*, *Triteleia laxa*, *Marah fabaceus*, and other wildflowers appear. About three-quarters of a mile into the trail there is a large clearing and to the right, growing out of the grass, are the flowers that mark the climax of this pilgrimage. The numerous yellow lanterns of the endemic *Calochortus pulchellus* hang elegantly from the slope, some in dappled shade and others in the full glorious soft golden sunlight of the northern California spring. These lanterns are some of my favorites of the genus. It is no surprise that one of California's greatest botanists, Willis Linn Jepson, considers this one of his favorites. Today, the insignia for the Jepson Herbarium at the University of California, Berkeley, is a silhouette of this lily.

After admiring the lanterns to your heart's content, you can continue on the trail from which many vertical miles and hours later you will arrive at the top of the mountain. Otherwise, take the Globle Lily Trail that loops back to the beginning where, along the way, you are treated to golden flowers of rabbit bushes (*Ericameria*), sunny inflorescences of mule's ears (*Wyethia*), and the pungent aroma of black sage (*Salvia mellifera*). If you're lucky, you will be able to spot strange naked yellow inflorescences of the parasitic plant *Orobanche fasciculata*.

One of the best things about Mt. Diablo is that most of the park is accessible by a nice road so it is easy to botanize by car. After the globe lily viewing, head toward the top of the mountain by car. Enjoy the blooming California poppies mixed in with *Dichelostemma capitatum* or, in a good year, a mountainside covered in white and the pungent aroma of *Ceanothus cuneatus*. One of the best trails to take on top of the mountain for geophytes is the Mary Bowerman Interpretive Trail. This loop trail is even wheelchair accessible and has some of the best geophytes the mountain has to offer.

In shadier parts of the trail, you can find a number

(continued to next page)

California Adventures (cont'd)

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of the variable form of *Fritillaria affinis*. No two flowers are exactly alike. On the north-facing slope there is a beautiful red chert outcrop where a pink-tipped white variant of *Lewisia rediviva* lives. When in full bloom, these plants dot the summit with little white chalices. Here you will also find the white (sometimes pink) form of *Allium falcifolium* with succulent curly leaves. This form of the species is not a serpentine endemic like the more widespread purple form. My favorite form of *Delphinium nudicaule* can also be found in the vicinity. The basal leaves are thick and succulent and the flowers are pure scarlet red. I have not seen a better form anywhere else. Mixed in are lovely appressed mats of a pink *Claytonia* species. These flowers enjoy one of the best views of the hills below, and on a clear day, they delight in a panorama of the Sierra Nevada Range from afar.

Early spring is the best time to see a majority of the geophytes in bloom. However, late spring also offers a few other nice species such as *Calochortus luteus* and *C. venustus*.

Left, top: *Calochortus pulchellus*, endemic to Mt. Diablo. Note the bracts, which have turned maroon with ago. Left, bottom: *Dichelostemma capitatum, Chlorogalum pomeridianum*, and California poppies put on a brilliant display. Right: *Fritillaria affinis* shows off its spots. Photos by Nhu Nguyen.

One story that I must tell, although not related to geophytes, is the rediscovery of the Mt. Diablo buckwheat, *Eriogonum truncatum*. The plant was presumed extinct because the last record of it was from 1936. Then one day in May 2005 one of my fellow graduate students, Michael Park, was hiking around a remote part of the mountain and found a small population of about 20 plants. Since then, seeds have been collected and raised by the UC Botanical Garden for conservation and reintroduction. The Mt. Diablo buckwheat is just one of the many threatened and endangered plants that call the mountain their only home. And because of that, a pilgrimage to Mt. Diablo means more than just seeing geophytes alone.

Planned PBS Gathering in Northern California

Nhu Nguyen

Greetings, Everyone:

To celebrate PBS's tenth birthday I am organizing a get-together at the UC Botanical Garden in Berkeley, California. The event will be held on Saturday, April 21, and Sunday, April 22, 2012. Saturday is the official date of the event sponsored by PBS. There will be a few short geophyte talks followed by lunch, walks around the garden, and visiting with other bulb enthusiasts. We'll have a show-and-tell table of plants, including some material for trade and sale.

Sunday is an unofficial field trip. We simply get together for a trip to Mt. Diablo, an interesting destination for California native plants, particularly geophytic plants. To tempt you, the geophyte list includes the endemic *Calochortus pulchellus, Allium falcifolium* both purple and white forms, *Allium serra, Delphinium nudicaule, Fritillaria affinis, Fritillaria lanceolata, Chlorogalum pomeridianum, Marah fabaceus, Triteleia laxa, Triteleia hyacinthina, Dichelostemma capitatum, Dichelostemma congestum, Zigadenus freemontii, Sisyrinchium bellum, Lewisia rediviva, Trillium chloropetalum,* and possibly more!

April in California is a beautiful time with sporadic rain and beautiful sunshine. It is a little too late for the mass blooming of desert wildflowers in the south (normally the first week of April), but northern California is usually in good bloom. Even if there weren't lots of wildflowers, the northern California coast is absolutely gorgeous in April, not to mention the redwood forests that are not too awfully far away.

So, hopefully with that, I have tempted you enough to think about joining us for a weekend full of geophytes and company with people who love them. If you are interested and have questions, please don't hesitate to contact me:

Email: xerantheum@gmail.com
Phone: 225–266–5918
Hope to see you there!

Please join the Board of Directors in welcoming Nhu as our new President and John Wickham as our new Vice President!
Many thanks to Jim Waddick and Paul Machado for holding those posts. We appreciate their willingness to serve!

Pacific Bulb Society

Gardening with Bulbs

Rachel Saunders provides an insider's view of the last IBSA meeting. To read about *Lachenalia stayneri* (above, photographed in Worcester by Rachel) and many other South African bulbs, see Rachel's article on page four.

Inside This Edition:

The Bulb Garden © 2012

The Bulb Garden is the newsletter of the Pacific Bulb Society (PBS). It is published, if enough articles are submitted, around the third week of each quarter and is available to PBS members. This newsletter provides gardening or bulb related articles, news of interest to members, and announcements of the PBS organization.

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