

# ESPINAS Y FLORES



Franziska Wolf

**Program:**

## **Richard & Franziska Wolf Present Baja California and it's Islands**

The Newsletter of the San Diego Cactus & Succulent Society Inc.  
Affiliated with the Cactus & Succulent Society of America

Volume 38 Number 3  
Saturday March 8th 2003  
1:00 PM

Room 101 Casa Del Prado, Balboa Park



# Presidents Message

February 17, 2003

**W**e had a great turnout for our February meeting - over 70 members signed in as well as many guests. We apologize for not having the program announced in the Newsletter - due to scheduling difficulties, it is not always known who the speaker will be far enough in advance to be published. Kelly Griffin does a great job bringing us excellent speakers all year long and I think most of us can appreciate that this can be a difficult task! Kelly did a wonderful job filling in with a slide show of Mexican Succulents when the speaker he was pursuing fell through. THANKS Kelly for all your efforts!

Jeff Harris and Ric Newcomer both did excellent jobs presenting *Kalanchoe* and *Erioseye* respectively, as the plants of the month. Ric had the fine idea that speakers tell a little about themselves and how they got the 'Succulent Sickness.' This made an interesting addition to the plant talks and is a good way to get to know members better. I hope future speakers will keep up this tradition. Thanks also to Joey Betzler for judging the Brag Table. It has been a while since Joey talked to us and is always interesting to hear his perspective on the plants.

I was sorry to announce that there will be no Spring Field Trip this year due to scheduling conflicts - EarthFair, the big Earth Day celebration in Balboa Park was moved to

May 27th - the day we were planning our trip and earlier dates could not be arranged. Thanks to all who expressed interest and know that trips will be organized in the future. March is a great month in San Diego for plant lovers - so many things to see and do. The month starts with the Spring Home and Garden Show at the Del Mar Fairgrounds (Feb. 28, March 1 & 2.) The Horticulture Society does quite a job setting up incredible demonstration gardens and there

will be many things to see and information available. We will once again have a booth to talk with people about Cactus and Succulents. The Baja Garden at the Wild Animal Park will be springing to life with all the rain - a great time to get out and see what Chris Miller and her team of volunteers have been up to - or join them one of these Saturday morning to help pull weeds!

(contact Chris for details 619.258.9915.) And March is Anza Borrego Month - a perfect time to visit this local desert treasure. They are having many special events and Backcountry Seminars throughout the month - for details and a complete listing, call 760.767.4315.

We all missed seeing member Carol Jean Wolcott - hope you are feeling better! Our meeting will be March 8 and I hope to see all of you there. As always, I welcome your ideas and suggestions regarding our Society.

Pam Badger





- ◆ **Seeds for Conservation: Coconuts to Parachutes**, Lecture with Joey Betzler  
Seeds are one of the most powerful conservation tools in the struggle to protect endangered organisms. Healthy seeds produce the plants that are the foundation of ecosystems. Unravel the history of plant development and learn how seed-bearing plants distribute their seeds. Discover present techniques employed for long term storage in a modern seed bank. Wednesday, March 26; 6:30-8:30 p.m. in the Charmaine and Maurice Kaplan Theater, Member, Senior 60 and over, Full-time Student, Military, Children 6-17: \$6 per lecture; Nonmember: \$8 per lecture Class Code: P3-310-01

Here is that link: <http://www.sdnhm.org/education/brochure/lectures.html#seeds>

**Seeds for Conservation: Seed Bank Workshop** —Members only! Instructor: Joey Betzler. Learn modern seed banking techniques in this fascinating hands-on workshop held at the Wild Animal Park's Botanical Conservation Center/Seed Bank, where simple processes are applied to store seeds for up to 200 years! Gain practical experience in making voucher specimens and recording collection data, collecting and processing mature plant material, separating seeds from the chaff, estimating seed numbers, record keeping, and freezing a sample for long-term storage. Limited to 15 participants. Enroll now! Saturday, March 29; 10 a.m.-3 p.m. Member \$65 per person Class Code: P3-330-14

Here is this link: <http://www.sdnhm.org/education/brochure/adults.html#seeds>

- ◆ **March, 2003**

- Anza Borrego Institute presents: Backcountry Seminars:**

- 3/8 "Jet Boat Tour of the Lowe Colorado Mining Camps" \$50.00

- 3/15 "Discovering Camp Lockett" \$15.00

- 3/22 "Desert Plants A-Z" \$20.00

- 3/23 "Birds and Bighorns" \$15.00

- 3/29 "Geology of Split Mountain" \$20.00

Call 760.767-4315 for registration and information.

- ◆ **Elfin Forest Garden Festival**

Sat May 3, 2003, 10:00 AM to 4:00 PM

20223 Elfin Forest Rd. Escondido 92029

[www.elfinforestgardens.info](http://www.elfinforestgardens.info).

- ◆ **Agave's Cousins:** Brian Kemble is the curator of the Ruth Bancroft Gardens in Walnut Grove which specializes in dry-growing plants. This includes many *Agaves* and *Yuccas*, including relatives such as *Manfredas*, *Hesperaloes*, and *Beschomerias*. Genera that were previously included are now classified separately. Examples are *Dasyliirion*, *Nolina*, *Dracaena*, and *Sansevieria*. Brian has traveled extensively to see these great plants in habitat. He intends to pass on his knowledge and experiences in his slide show and lecture. Presented by Palomar Cactus & Succulent Society Saturday, March 22nd. 12:15 PM Joslyn Senior Center 215 Park Bl. Escondido CA. Guests are always welcome. Info. (760) 743-1560

# Contemplating Frailea

by Mark Fryer

One of the most frequent contemplations I have about *Frailea* has been around its method of generating (or not) seeds. *Frailea* flowers are cleistogamous, possibly exhibiting some degree of apomixis (either obligate- impotent offspring- or facultive - possibly sexual offspring), but nearly always producing copious seed if the flower never opens. If the flower opens, no seeds will be produced. I have been unable to set seed on *Frailea* by cross-pollinating various species of *Frailea* in flower simultaneously, but *Frailea* flowers are usually shy to reach anthesis anyway.

Cacti are very sexual plants. For a specialized, semi-woody, perennial plant family to exhibit the entirety of sexual and asexual reproduction that the *Cactaceae* do, and do it all within the new world (for all practical purposes), one might assume the Family to be at least fairly uniform and concise. This would be a classic "false assumption" in terms of cacti, from their outward appearance (morphology), to their DNA.

In getting familiar with the naked ovary, members of the family *Cac-*

*taceae* have two means of reproduction, sexually (self-fertilization, cross-fertilization, and cleistogamy), and asexually (floral-vegetatively via proliferation {vivipary - think of *Opuntia prolifera* or others that will offset from a fruit - The term 'vivipary' is also used to describe the germination of seeds within a fruit, a common occurrence in a number of cacti genera} or via Agamospermy {apomixis - the ability for the female to set fertile fruit without male assistance - or parthenogenesis where the embryo develops from the egg cell without fertilization}). To

the best of my knowledge no one has ever taken the cleistogamy question further, to determine whether the plants are actually self-pollinating or not.



*Frailea horstii* v. *fecotrigensis*

Cleistogamy is such an interesting behavior; I am surprised at the dearth of hypothesis regarding whether or not it presents a possible basal or derived character state. The only other genus that exhibits this behavior is *Melocactus*, which many consider to be a highly derived member of tribe *Cereae*. Would this indicate derivation for *Frailea* within *Notocactinae*, or is it more primitive? Some suggest looking at another self-fertile miniature due west of *Frailea*'s homeland: *Blossfeldia*. Some have even suggested

lumping the two together (which is asinine in my opinion), but the fruit, seed, and floral characteristics are too extreme from one another to warrant too much attention. It would be easier to make the case that the plants have seeds very close to *Malacocarpus* (*Notocactus*), and must be a close cousin. When the rare flower does open, a striking similarity to many of the canary-yellow *Notocactus* and *Parodia* flowers is seen.

With *Frailea* we have an opportunity for contemplating cactus floral reproduction from all sorts of perspectives, we have a genus that forces us to look at what constitutes a species from a form, and we have a charming, true-miniature ornamental cactus.

*Frailea* might be viewed by some as a jangled mess of nomenclutter.

Originally named by Britton and Rose in honor of Manuel Fraile, a Spanish-born caretaker of the cactus collection at the USDA in Washington DC, the genus has seen more than it's fair share of revision, amplification, and lumping. Originally thought to contain 8 species (one of which wasn't even a *Frailea*- *Gymnocalycium bruchii*), they cited the type as *Frailea Echinocactus* *cataphractus*, which was described from greenhouse material. Bear in mind that the tide of enthusiasm for botanical treasures from South America had flooded the horticultural market with copious forms and varieties some 50 years prior. Britton and Rose had never seen a flower, but saw fit to include it in their sub-tribe *Echinocactinae* based on it being a globular cactus with fuzzy-hairy fruit.

By the time Backeberg at-

tempted to define the genus some 30 years later, there were well over 100 species in circulation, and he actually reduced the number to 35, with provisional varieties adding 8, for a grand total of 43 forms of *Frailea*. Since 1966, there have been additions and subtractions to the extreme from all sides of the argument, resulting in a high-end figure of well over 200 species and forms, to 18 species with a couple of forms. A search on the IPNI website returns 302 entries.

As long as I've been growing cacti, the genus *Frailea* has been a source of fascination, contemplation, and frustration for me. Contrary to many growers' opinions about them, there's nothing "frail" about *Frailea* at

all. I suppose the phonetic similarity to the word "failure" probably doesn't help these little plants take center stage in more cactus collections around the world. As with most tap-rooted cacti, the *Frailea* demand some special care in cultivation to avoid either failure, or a frail plant. To add to the challenge of raising *Frailea*, they are relatively short-lived plants, only lasting a mere 15 or 20 years before simply dying of old age.

The vast majority of *Frailea* are propagated from seed, and if one wants to truly engage with the diversity of the genus, basic seed-germinating skills will be required to flesh out the genus in cultivation. This is probably the cause of the dearth of commercially available plants, where the ornamental horticulture industry balks and the collectors and specialists shine. I have raised *Frailea* from seed to flowering in 6 months under 24-hour light cycles with a constant temperature

available for juvenile plants to mature very quickly, which from the longevity standpoint makes sense to me.

Culture of *Frailea* in captivity is essentially the same as for any tap-rooted species: don't let it dry out, and don't plant it in something that's going to stay soggy for more than ten minutes. Bruising the roots when it's attempting its subtle and brief fall/spring slow-downs (I won't say dormancy, because I don't believe these actually need a dormant period in the sense *Echinocereus* or *Coryphantha* do) can be catastrophic, but fortunately *Frailea* are usually quick to recover. My oldest plants occupy 2" pots that probably haven't had their soil changed in over 10 years.

I encourage anyone with an interest in cacti to grow as many different forms of it as they can find!



### Brag Table Winners



## Brag Table Winners

Anyone is welcome to participate in this activity. If you have a Cactus or other Succulent that is looking particularly good - we encourage you to bring it in for the "Brag Table." There will be small entry cards to fill out with the name of the plant (to the best of your knowledge) and your name. The plants will be judged by a knowledgeable member and 1st, 2nd, & 3rd place is awarded to plants based on their health, staging, rarity, difficulty of growth, and the subjective opinion of the person judging. A small stipend is awarded which can be used toward the purchase of plants in our sales area.

February 8, 2003 winners

Judged by: Joey Betzler

Succulents:

1st *Albuca spiralis* - Andrew Wilson

1st Miniature Succulent Collection - Jeff Wright

2nd Collection of small *Echeverias* - Marylyn Henderson

3rd *Kalanchoe 'elves bells'* - Sylvia Hatcher

3rd *Lachenalia alooides v. quadricolor* - Eugene Orth

Cactus:

1st *Mammillaria zielmanniana* (No name on tag)

2nd *Mam. elongata 'monstrose'* - Ken Blackford

3rd *Mam. magnimamma* - Terry Parr

Thank you for participating!

## The Plant Exchange Table

When I first joined the Society, I was (and continue to be) very pleased that our club has such an activity to help spread its message of sharing knowledge (and plants) with all that are interested. It can be a fantastic place to get a plant that you don't have, and also a place to unload some extra plants that can be shared. One of our functions, unwritten though it may be, is to promote such activity. Some of our members make it a point to bring several plants, if not more, to each meeting to grace the exchange table. What's even more extraordinary is that they don't wish for a plant in return - altruism at its most noble, one might say.

Lately, however, a number of you (and it is in the minority) have unfortunately chosen to bring in rather poor offerings to the exchange table. This really diminishes the value and objective of the table. I am not asking that you bring a show-quality specimen, but I do request that you bring in a plant or plant-related item for exchange that is well-grown and in good shape. A branch of *Crassula ovata* broken off just before you leave for the meeting, slashing a clump of *Aloe arborescens* for a stem of it, or bringing in a smidgen of a plant or one that is sounding its death knell is not the kind of exchange item that should be on the table. A plant that is well grown, whether rooted or not (preferably rooted) should be provided. Sara Schell and Michelle Heckathorn, the two ladies that ably oversee the Exchange Table, do a great job, but they can only do so with your fair participation.

***'If you would like to receive a good plant at the Exchange Table, bring a good plant to the Exchange Table'***

If you have any questions about what is suitable plant exchange table material, I would be happy to answer them. Thank you for your attention to this and for your participation in this worthwhile activity.

Sincerely,

Jeff Harris

SDCSS VP and Factotum

# Echeveria

by Dorothy Dunn

*Echeverias* are among the most beautiful of all succulent plants, their most outstanding feature probably being the infinite range of leaf color in almost all shades imaginable, as well as a variety of leaf textures. In addition to this, they are easy and reliable bloom-ers, and with a fairly representative collection it is possible to have some in bloom almost all year 'round. The flowers range in color from red through orange, pink, and yellow. Most species are quite hardy outdoors in California, and these are useful as colorful and maintenance free bedding plants for borders and rock gardens. They also make excellent pot plants.

The genus *Echeveria* belongs to the large *Crassulaceae* family, which consists of at least 25 genera including *Crassulas*, *Cotyledons*, *Adromischus*, *Dudleyas*, *Kalanchoes*, *Sedums*, *Sempervivums*, *Pachyphytums*, *Graptopetalums*, *Aeoniums*, etc. It was established in 1828 by the Swiss botanist Augustin de Candolle and named after Anastasio Echeveria, the gifted botanical illus-

trator of the Flora Mexicana. At this time only three or four species were known, but today there are at least 150 described species as well as innumerable hybrids and cultivars. Eric Walther's monograph on *Echeveria* lists 143 species, which he divides into fourteen series according to each plant's individual characteristics.



*Echeverias* have a geographical range of well over 4,000 miles, extending from southwestern Texas to northwestern Argentina. The greatest concentration occurs in Mexico, where about 120 species are now known. Only one species - *E. strictiflora* - is native to the United States and this occurs in Texas, which is the northernmost extent of the genus.

Many California plants were at one time classed as *Echeverias*, but they have since all been transferred to *Dudleya*. Their typical habitat is generally the high mountainous areas of Mexico and Central and South America, between elevations of about 3,000 to 14,000 feet, where they often grow in close proximity to *Sedums* and *Pachyphytums*. In their native habitats they are accustomed to summer rains, and a dry, almost completely rainless



winter, as well as a great fluctuation in rainfall. For instance, one species (*E. australis*) which occurs in Costa Rica, may receive as much as 12 inches of rain in September alone, while on the other hand there are some species which may get as little as 10 inches annually. They have a definite preference for rocks, cliffs, steep slopes and recent lava flows, and they almost always seek the shelter of low bushes and the shady north slope of a hill with denser tree cover and more humus deposits.

Some species, such as *E. elegans*, *E. agavoides*, *E. pulvinata*, and *E. setosa* will stand considerable frost. None of them like high humidity, and the kinds with large, cupped leaves may start to rot or develop unsightly leaf spots when the leaves remain cold and wet in winter. In fact, some authorities recommend watering from below (that is, standing the pots in a shallow container of water) to avoid getting water on the leaves, as many *Echeverias* are covered with a waxy bloom which causes the water to collect in drops on the rosettes, which in turn leads to rotting. Also, our notoriously hard water can leave a deposit of salts on the foliage which spoils their appearance. Hailstorms are devastating, it may take plants almost a year to fully recover from the damage caused by wind driven hail, and by then you usually have another hailstorm! Another disastrous event is the occurrence of a sudden heat wave following days or weeks of cool, overcast weather such as we often experience as part of our typical Southern California spring. The plants simply cook.

*Echeverias* can be watered in moderation all year 'round as they do not require a winter rest period. They

do like good ventilation and good light. While many species will tolerate full sun, which gives them better leaf color, some of the more tender hybrids and the fuzzy-eared varieties (notably *E. ciliata*, *E. setosa* and its hybrid *E. 'Doris Taylor'*) prefer more shade.

Principal pests are mealy bugs (between the leaves) and aphids on the flowers. Some species, are also susceptible to root nematode. Your soil mix can consist of the usual 1/3 coarse sand, 1/3 good garden soil, and 1/3 well rotted leaf mold or other organic material. *Echeverias* like a fairly rich but well-drained soil.

Propagation is by offsets, leaf cuttings, or beheading and re-rooting the larger, taller species when they become too lanky. You can also sometimes root the spent bloom-stalks after removing them from the plants. It's possible to grow *Echeverias* from seed, but most authorities don't recommend it as they hybridize so freely. However, in the case of some species which seldom if ever off-set (*E. lauii*) or are practically impossible to grow from leaves (*E. minima*, *E. lauii*) seed growing is the only alternative. *Echeverias* also hybridize easily with other genera, especially *Pachyphytums* (*xPachyveria*), *Graptopetalum* (*xGraptoveria*), *Sedum* (*xSedeveria*) and *Dudleya* (*xDudleveria*). This has resulted in some extremely beautiful plants which are characterized by the most outstanding and desirable features of both parents.

References:

Carruthers, L. and Ginns, R.: *Echeverias*  
Chidamian, Claude: *Book of Cacti and Other Succulents* (pp. 72 - 76)  
Walther, Eric: *Echeveria*

# Plants of the Month 2003

<u>Month</u>	<u>Cactus</u>	<u>Succulent</u>
February	Eriosyce/ Ric Newcomer	Kalanchoe/ Jeff Harris
March	Frailea/ Mark Fryer	Echeverias in Habitat/ Kelly Griffin
April	Rebutia/ Tom DeMerritt	Gasteria/ Chris Miller
May	A Cactus in May/ John Durham Sansevieria/ Pam Badger	
July	The Flora of Baja California/ Dr. Jon Rebman (combined cactus and succulent)	
August	Melocactus/ Mark Fryer	Hoyas/ Jeanette Dutton
October	Gymnocalycium/ Terry Parr	Terrestrial Bromeliads/ Tom Knapik
November	Rhipsalis/ Pam Badger	Sarcocaulons & Pelargonims/ RudyLime

# Upcoming Events

2003

**February 28th, March 1st & 2nd Home & Garden Show** Del Mar Fairgrounds

**Saturday, March 22nd. 12:15 PM Agave's Cousins:** *Brian Kemble* is the curator of the Ruth Bancroft Gardens in Walnut Grove which specializes in dry-growing plants. This includes many *Agaves* and *Yuccas*, including relatives such as *Manfredas*, *Hesperaloes*, and *Beschomerias*. Genera that were previously included are now classified separately. Examples are *Dasyliroia*, *Nolina*, *Dracaena*, and *Sansevieria*. Brian has traveled extensively to see these great plants in habitat. He intends to pass on his knowledge and experiences in his slide show and lecture. Presented by Palomar Cactus & Succulent Society Joslyn Senior Center 215 Park Bl. Escondido CA. Guests are always welcome.

**May 27th Earth Fair** Balboa Park, San Diego

**April 27th Mission San Luis Rey 5th annual Pepper Tree Day** The inner sanctuary is open to guests in honor of California's oldest Pepper Tree. Gates open at 11:00 AM info.- (760) 757-3651 x-127

**May 18** (Sunday) Epiphyllum Society of America's Show and Sale. Ayers Hall, Arboretum of LA County, Arcadia CA. Information: [www.epiphyllum.org](http://www.epiphyllum.org)

**June 1** Toronto C&S Club Show and Sale at Civic Garden Centre, Edwards Gardens, 777 Lawrence Ave. East, Toronto, Ontario, Canada. Sunday 10am - 4.30pm. Information from Dave Naylor 905-877-6013 or e-mail him at [naylor@unforgettable.com](mailto:naylor@unforgettable.com)

**June 7th & 8th San Diego Cactus & Succulent Society Show & Sale**

**June 14-19** (Sunday through Thursday) CSSA 30th Biennial Convention, St Louis MO hosted by the Henry Shaw Cactus Society.

*In 2003, the Henry Shaw Cactus Society will host the 30th Biennial CSSA Convention in St. Louis. From the welcome reception on June 14 to the farewell party on June 19, prepare for a full schedule of education and fun. Enjoy hunting plants at the BIG cactus sale, too. (No sales on field trip days.) Sunday and Monday are "Succulent Days," with over a dozen presentations by noted speakers. Sunday's special banquet speaker is Missouri Botanical Garden Director Peter Raven, who will discuss endangered cacti of the United States. Tuesday features field trips to Missouri Botanical Garden, Forest Park attractions, Cass Bonsai Garden -- even a riverboat cruise. Wednesday and Thursday resume with "Cacti Days" and more informative programs by a group of international scholars and botanical experts.*

**July 5-6** CSSA Show & Sale, Huntington Botanical Gardens, 1151 Oxford Rd, San Marino CA.

**August 30** Huntington Symposium, Huntington Botanical Gardens, 1151 Oxford Rd, San Marino CA. Info: 626-405-2160 or 2277

**August 31** CSSA Board Meeting, Huntington Botanical Gardens, 1151 Oxford Rd., San Marino CA.

2004

C&SS of New Zealand AGM and Convention, Palmerston North, New Zealand. Info from Frances Verrity at [verrity@actrix.gen.nz](mailto:verrity@actrix.gen.nz)

**August 21** British C&SS National Show, Spalding Exhibition Centre, Springfields, Spalding, Lincs, England.

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## **Espinas & Flores**

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### **Standing Committees & Sub Committees**

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Susan Hopkins  
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Programs: Kelly Griffin  
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Stefy Mangold  
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### **San Diego Cactus & Succulent Society Executive Board Members**

President: Pam Badger (619) 589-1223  
Vice President: Jeff Harris (619) 294-5708  
Secretary: Christine Tratnyek (619) 461-0737  
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