

CENTRAL SPINE

NEWSLETTER OF THE CENTRAL ARIZONA
CACTUS & SUCCULENT SOCIETY

AN AFFILIATE OF THE CACTUS & SUCCULENT SOCIETY OF AMERICA

ON THE WEB AT WWW.CENTRALARIZONACACTUS.ORG

March, 2009



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LOCAL CALENDAR

March 29th, Sunday, 2 pm

Speaker - Cesar Mazier
 Title - Deserts of the World
 Regular Club Meeting
 Dorrance Hall, Desert Botanical Garden

Cesar Mazier is the former Director of Horticulture for the Desert Botanical Gardens. After 16 years at the DBG, Mr. Mazier has become one of the leading landscape designers in the greater Phoenix area.

Central Arizona Cactus & Succulent Society Plant-of-the-Month Selection - a.k.a. Mini Show

March no mini show due to annual show

AprilEchinocereus Crassula

MayAstrophytum Stem
 caudiciforms



ON THE COVER

Bud of *Cylindropuntia acanthocarpa* var. *major*. While flowers of cacti usually capture the lions share of our attention, I was particularly taken with the petal-like arrangement of the deciduous leaves ringing the flower bud. Interestingly, the bud scales, leaves, and final flower all have similar colors. For comparison, plants with yellow flowers have green leaves and bud scales. Ants are common visitors to this cactus as the extrafloral nectaries of the areoles produce copious amounts of amino acid enriched sugar solution. Photo taken March 2009. Laurence Garvie

PRESIDENT'S LETTER

Participating in the annual CACSS Show and Sale is like making a Thanksgiving dinner. You spend days, potting up, grooming, primping and generally making your plants pretty for the Show and you no sooner get to Dorrance Hall and it's over! I must've had fun!!! As usual there were some wonderful plants in the show this year and the Trophy Table had some real gems on it. Dorrance Hall looked grand with all the other entries adorning the tables. Firstly, I want to thank all the people who spent the time to prepare their plants for display at the Show. Believe me, I know what an effort that is. Secondly, I want to thank all the people who volunteered to make the Show happen and there were a few who seemed to be there the entire time. It's the combined effort of exhibitors, volunteers, vendors and Show and Sales Chairs that make a Show a fun event. Thanks again.

No sooner is the Show over when our thoughts turn to the CSSA Convention being held in Tucson during April. I hope as many CACSS members as possible can attend even if for only a day or two. There are some very interesting programs and speakers lined up. And you can bet that the Tucson cactus nurseries will have some exquisite plants ready for attendees of the Convention.

The next Board Meeting will be at 7:00 pm, April 2nd, at Native Resources International, 1540 W. Happy Valley, Phoenix, in the Conference Room of Building A. Guests are welcome and if you need directions give me a call or send an e-mail!

See you at the meeting! - Steve Plath

From the Editor - This issue of the Central Spine has a slightly different look than the previous ones. This difference is caused by the fact that my computer died a few days ago. Fortunately, I was able to retrieve the almost-finished March issue of the Central Spine and work on it on another computer. Unfortunately, the other computer does not have the font installed that I have used in the previous issues (I found the font for sale online but I was not willing to spend the \$256.00 for it). So there has been a frantic few hours of reformatting in another font. Another consequence of working on another computer is that I do not have ready access to my photos or ones that have been sent to me. So I ended up with some blank areas in this issue - hence the addition of an abstract of mine at the end of this page.

Hopefully, all will be back to normal for the next issue. Laurence Garvie

Decay of cacti and carbon cycling

Laurence Garvie

Cacti contain large quantities of Ca oxalate biominerals, with carbon derived from atmospheric CO₂. Their death releases these biominerals into the environment, which subsequently transform to calcite via a monohydrocalcite intermediate. Here, the fate of Ca oxalates released by plants in arid environments is investigated. This novel and widespread form of biomineralization has unexpected consequences on carbon cycling and calcite accumulation in areas with large numbers of cacti. The magnitude of this mineralization is revealed by studying the large columnar cactus *Carnegiea gigantea* (Engelm.) Britton and Rose in southwestern Arizona (locally called the saguaro). A large *C. gigantea* contains on the order of 1×10^5 g of the Ca oxalate weddellite—CaC₂O₄·2H₂O. In areas with high *C. gigantea* density, there is an estimated 40 g C_{atm} m⁻² sequestered in

Ca oxalates. Following the death of the plant, the weddellite transforms to calcite on the order to 10 to 20 years. In areas with high saguaro density, there is an estimated release of up to 2.4 g calcite m⁻² year⁻¹ onto the desert soil. Similar transformation mechanisms occur with the Ca oxalates that are abundant in the majority of cacti. Thus, the total atmospheric carbon returned to the soil of areas with a high number density of cacti is large, suggesting that there may be a significant long-term accumulation of atmospheric carbon in these soils derived from Ca oxalate biominerals. These findings demonstrate that plant decay in arid environments may have locally significant impacts on the Ca and inorganic carbon cycles.

Published in *Naturwissenschaften* (2006), vol. 93, pp. 114-118.

Messing with the Mesembs: *Conophytum*

Cliff Fielding

Mesembs are delightful small plants that can be easy to grow in the Phoenix area. I have been growing them for about 12 years. I have been killing them for about the same length of time. Therefore, this article is not an expert providing you with the recipe for success, but merely the observations of a grower that loves these beautiful plants.

Conophytums are small very succulent plants that, like *Lithops*, have been reduced to two fused leaves on a short stem. The varieties that result from this simple structure seem endless. Steven Hammer listed around 100 species, with an even greater number of subspecies and hybrids in his latest book published in 2002. The conophytums can vary in size, shape, flower color, flowering time, markings, and number of leaves. As Steven has written two wonderful thick books on the subject, this short article will discuss the way I have had some success in growing these wonderful small plants in Phoenix.

I was first exposed to *Conophytum* at Plants for the Southwest in Tucson. I had been drawn in by their amazing *Lithops* collection (for a long time I thought many headed *Lithops* were easy and common).

It was several visits before I even noticed that they had other odd looking plants that were not *Lithops*, but were very beautiful and interesting. They often did not live many seasons, like a lot of beautiful interesting plants I have owned. Most *Conophytum* go dormant in the summer. To conserve water in a very dry environment, the old leaf pair recycles its water to the new leaf pair. Unlike *Lithops*, the outer leaves turn



Conophytum pellucidum

brown and shrink-wrap around the new inner leaves, protecting them from the summer dryness. In their summer dress they are not very attractive! This may account for their lack of popularity. In 2002 Steven Hammer speculated there were only about 15 growers in the entire US. Soon after trying a few plants from Plants for the Southwest some one told me there was a grower who had great plants for very little money. The grower was Steven Hammer. The first plant I got from him lives to this day in a much-diminished form. It seems to get smaller each year. Oddly enough the seedlings from this plant are fantastic and exuberant in their growth. After discovering S. Hammer had published an entire book on the genus *Conophytum*, I could not wait for it to arrive. I was dumb struck by the amazing variety and beauty of these plants.

While it was easy to get great plants, keeping them was very frustrating. The biggest obstacle was getting them through our endless hot summer and my irregular watering habits. I tried many things shade, bringing them inside, and burying them in

sand. On the verge of giving up I asked Steven Hammer for advice. He said there was a great grower, George Lombard, right here in Phoenix. George provided me with the recipe for success that has been helpful for most conophytums. In the last few years I have lost very few to poor care.

To understand how to care for these plants it is helpful to understand what the climate is like where they grow. Coastal sections of Namibia and South Africa will locate most species of *Conophytum*. Rainfall is usually sparse (thus the need conserve water) with a majority of the rain falling in the winter. Fog is a weather feature found in the spring, winter and fall that may provide critical moisture for the plants. Fogs are very regular when the wind is off the ocean and the humidity is high. This desert is very unique in that long droughts are very rare. The growing season consistently provides regular light moisture for the plants. Downpours are infrequent. The latitude is very close to ours so the sun intensity is not very different. The big difference is our prolonged periods of nighttime temps over 80° F.

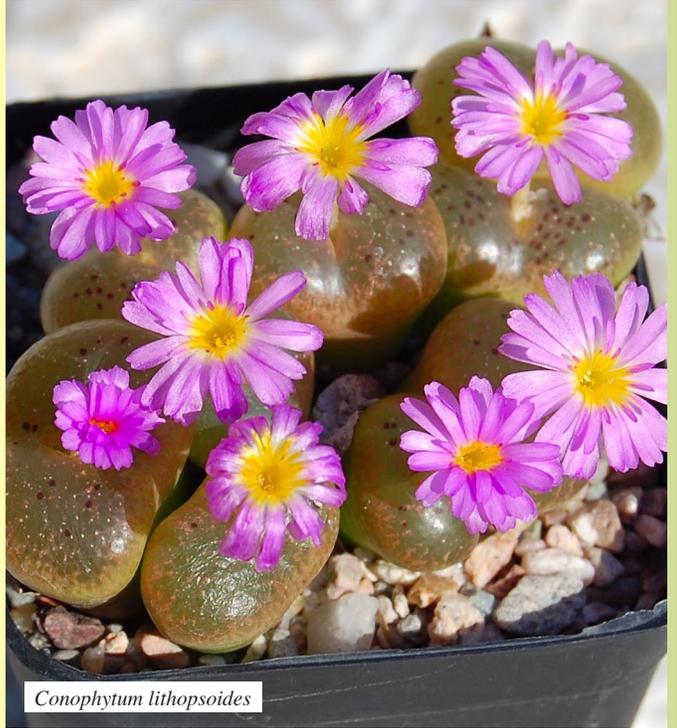
To have success with these plants you must (like all plants) get the watering and light correct. The roots of most conophytums are very short. Regular light watering during the growing season is best. If the plant is wrinkled a little water will fill it, a lot of water may burst it. Some species live in shallow "pans" that will fill completely with water. Most conophytums do not rot easily in the growing season. When the temperature climbs above 90° F they begin to go dormant. At this point I will stop watering until the monsoon rains begin. I let them get a good soaking in some of the monsoon rains. You will then begin to see the plants starting to come out of dormancy. The new leaves will fill with water and break out of their protective brown sheaths. At this point you do not want the plant to get so much water that it starts to grow. Try to give a light watering every few weeks to maintain the balance between dormancy and growth until the cooler temperatures arrive in the fall.

The monsoon rainfalls for 2008 were more than we have had in many years. As a result the conophytums broke out of dormancy very early and had their best fall bloom ever, though blooming fertilizer may have helped. Light requirements for each species can be different. Some conophytums are crack dwellers and others grow quite exposed. I vary the light with the season. In winter I give them 30 percent shade at mid-day with full sun in the morning. When the sun intensifies in the middle of January, I will double the midday shade to two 30 percent sheets. At dormancy I switch to 30 % over a 60 % sheet of shade cloth, hidden in their sheaths this much shading may not be needed. I found that if they are in deep shade under a tree or inside they will bloom poorly. If the sun is too intense the leaf will burn.

Conophytums seem to be an easy plant to grow here in Phoenix once you learn their seasonal rhythms. They provide an interesting variety of shapes, sizes, flowers and markings. They grow at a time that is nice to be outside here in Phoenix. For more information consult Steven Hammer's wonderful books.



Conophytum pellucidum cupreatum



Conophytum lithopsoides



Conophytum marginatum subsp. littlewoodii



Conophytum orbicordellum



Conophytum pellucidum terricolor



Conophytum pellucidum multicolor

Winter-growing Bulbs: Part II

Celeste Gornick

After viewing Leo Martin's and my bulbs at the February meeting, several people expressed interest in learning more about growing South African (winter growing) bulbs. I have sent along a few sources for bulbs in the U.S.A. I have also included two sites for bulb growing societies.

We have also learned that we can look forward to a new bulb group that is going to be from South Africa but they are still in the early stages right now.

For the hardcore seed growers, Silverhill Seeds is highly recommended but growing bulbs from seed can take several years from sowing to flower especially for things like brunsvigia and boophane (eight years is not uncommon).

Just a few sources for mail order bulbs:

<http://www.bulbmeister.com/>

<http://www.easytogrowbulbs.com/>

<http://www.telosrarebulbs.com/index.html>

I have also purchased a few bulbs on eBay but there is not always a lot available. Likewise, you may find that vendors sell and ship bulbs seasonally so you may have to wait until next summer or early fall to place an order for bulbs for next year.

For viewing pictures of bulbs, and for information:

http://www.bulbsociety.org/GALLERY_OF_THE_WORLD_

BULBS/

<http://www.ne.jp/asahi/morio-m/oxalis/oxalis/indexO.html>

<http://www.oxalis.org/>

<http://www.pacificbulbsociety.org/>

Check their "wiki" for pictures. You can also join the discussion group without joining the club.

One of the best sources to buy already growing and possibly flowering bulbs in Arizona is Plants for the Southwest in Tucson. Arid Lands also had a very small selection this year.

Check out the book "The Color Encyclopedia of Cape Bulbs" By John C. Manning, Peter Goldblatt, and Dee Snijman from Timber Press.

<http://www.timberpress.com/books/isbn.cfm/9780881925470>

I highly recommend it.

What is blooming now in my "container garden": oxalis, amaryllis, morea, lachenalia, albuca, (in bud) a mixed pot of ixia and sparaxis, clivias, daffodils, hyacinth, velthemia. Some are already finished for the year. Many more are leafed out and I am watching expectantly for flowers. I have a big pot of native blue dicks (gathered seed from the last cactus rescue) coming up now. Which reminds me --- it is almost wildflower season, but that is another subject!

As always, have fun and happy growing!!!

30% Shade Cloth

Paul Schueneman

Several years ago I started using 30% shade cloth to stop sunburn on cacti and succulents in my yard. Shade cloth is a loosely woven UV-stabilized polypropylene netting. As the name implies, it blocks out 30% of the sun. Whenever I transplant cacti and succulents in my yard, I shade them with cloth for the first summer to help them acclimate to full sun. Usually by the next summer, (assuming they are full sun plants) they are used to the sun and no longer need the shade cloth. Before I knew better, I used old window screening or shade cloth I got at the local hardware store to try to stop plant sunburn. But it blocked out way too much of the sun, and my plants never acclimated, duh. I also found 30% shade cloth useful for shade disasters. The Palo Brea tree in my back yard split during a monsoon storm. I had to have it removed. Unfortunately, it was providing the shade for my sun sensitive Echinopsis bed. My prized Echinopsis plants started

to sunburn immediately. I built a 30% shade cloth tent over the bed, and the Echinopsis are doing fine. The tent is not very pretty, but it is making shade until the replacement Palo Brea gets big enough to do so.

If you are interested in getting 30% shade cloth, Arizona Bag Company sells it. They are located at 2530 West Buckeye Road about ½ mile west of I-17 on the northwest corner of 25th Avenue and Buckeye Road. Website: www.azbag.com. Phone: (602) 272 1333. The minimum yardage you can buy is 10 linear yards (30 feet). It comes in two widths. The 10' wide is \$ 4.50 per yard, so that runs \$45.00. The 20 ft wide is \$9.00 per yard or \$ 90.00 for 30 feet. Yes, that is pricey, but the cloth seems to last forever. I bought some cloth eight years ago, it is still in great shape, and I have used the same pieces over and over.

Plant Tags

R.P. Brown

I like to put tags on my plants. It helps me learn and remember the names. It provides a place to record rooting/potting/repotting dates and to put the plant care codes to remind me what should be brought in or covered if frost is in the forecast. Although many "store bought" plants come with tags, they are all different sizes shapes and colors. Given my penchant for uniformity, this drives me crazy, so lacking a source for cheap already made tags we set out to make our own.

After experimenting with different scraps of plastic we finally hit on something that works great. The vertical blinds that are ubiquitous in the valley make perfect tag material. They are

readily available both as old ones you were going to throw out or replacement packs, you can buy at any of the chain hardware stores. The un-patterned white ones work best. They cut easily with scissors or better yet, a paper cutter and they are designed to resist degradation from ultraviolet light. Using a paper cutter (the kind you used to use in school with the ruler, graduated grid and cutting arm), I was able to produce several hundred in an hour and they were all the exact size and shape I wanted. Be sure to write on them in pencil as most inks will soon bleach out in the sun. I'm sure this is old hat to many of the long time enthusiasts, but I thought I'd pass it along.

MEMBERS' PHOTOS



Armatocereus mataranus v. ancashensis - photo © Scott McMahon



Easter Lily Cactus - photo © Rick Rosenberg



Fruit of *Mammillaria tetrancistra* - photo © Laurence Garvie

MISCELLANEA

DUES

Pay your dues!

Membership is by calendar year. Annual dues is \$20 individual (1 newsletter, 1 vote), and \$25 household (1 newsletter, 1 vote per member); 1/2 price paid August-December.

Make checks payable to and mail to:

CACSS, PO Box 63572, Phoenix, AZ
85082-3572. More info: 602-852-9714.

PUMICE FOR SALE

If anyone is interested in buying some pumice, I can bring bags of pumice to the meeting on Sunday. One bag - equivalent to a 5 gallon bucket full - is \$2.00. Email me if you want some and how many bags you would like.

Lee Brownson - lsbrownson@cox.net

NAME BADGES

CENTRAL ARIZONA CACTUS AND SUCCULENT SOCIETY



JO
DAVIS

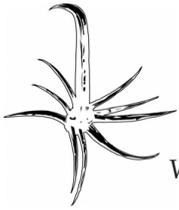
Interested in one of the name badges you see other members wearing? You can have one of your very own! Talk to Jo Davis at the meeting or send her a check for \$7.50, made out to "Jo Davis" to her home address:

2714 W. Monte Ave. Mesa, AZ 85202

CACSS WEBSITE UPDATES

Please check out the new additions and changes to the CACSS website. We have even more new changes coming in the near future. Soon to be added will be helpful articles and reference materials, including a search capability (a great big "thank you!" to Sue Hakala and Diana Decker for all their hard work in getting these articles prepared)! If you have not already done so, be sure to check it out at www.centralarizonacactus.org/

If you have any suggestions or ideas please contact Melinda Louise at 602-326-1684 or email melindalouise@hotmail.com



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PLANT QUESTIONS???

Many CACSS members have experience with different kinds of succulent plants. I hope they will add their names to the following list (just call or e-mail Bob Torrest). For now the list is simply alphabetical with principal interests. When more members add their information, the list will be cross-referenced by topic.

WHOM TO CONTACT!!!

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