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**ON THE COVER**

Fruits of *Ferocactus cylindraceus*. During August of 2006 I took part in the most amazing and easiest cactus salvage ever at the Verrado site on the southeastern flank of the White Tank Mountains. There were thousands of *F. cylindraceus* for salvage all in neat rows. All one had to do was put a tag on the plants and load them into ones truck. I ended up with 50 plants (I wish now I had salvaged more) - all but one survived. These plants are amazing as they start flowering in the spring and continue on through the summer - all with little attention. While the... variety of color and size, from small and red through orange, yellow, and green - there are even multicolored fruits.

Photo July 2009 © Laurence Garvie
A huge thank you to all who have contributed to this issue of the Central Spine including Cliff Fielding, Susan Tyrrel, and Bob Torrest. The August issue is currently empty, so please feel free to fill it up. Also, thank you to all who have emailed me photos for our newsletter. I currently have a stock of unused photos, but please do not let that deter you from sending more.

I have been the editor of the Central Spine since June of 2008 and I am planning to complete my tenure with the May 2010 issue. So, for those who are computer literate, would like a challenge, and are interested in taking over...now is your chance!

Do not be put off if you have little or no experience with being an editor - neither did I. While I do not want to put prospective volunteers off, this can be a time consuming job. For example, I have now got the preparation of new issues of the Central Spine down to about 12 hours of work. Considerably more time was spent on the first few issues.

What does one need to be the editor? Essentials include the following - time, computer, email/internet access, and a typesetting program. For the latter I use the Adobe suite of products, primarily InDesign and Photoshop. While I had some familiarity with Photoshop, InDesign was new for me. It’s amazing what a few hours with the InDesign manual will do.

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Hopefully, my ramblings have inspired someone to consider volunteering to be the editor for Central Spine starting with the June 2010 issue.

Laurence Garvie

TRAFFIC ALERT
Galvin Parkway Construction
A New Intersection for the Desert Botanical Garden

The City of Phoenix Street Transportation Department, in conjunction with the City of Phoenix Parks and Recreation Department and the City of Phoenix Water Services Department, is constructing a new roundabout in Galvin Parkway at the entrance of the Desert Botanical Garden, and installing a new water transmission main in Van Buren Street between 53rd Street and Galvin Parkway and in Galvin Parkway between Van Buren Street and the entrance of the Phoenix Zoo. Construction is scheduled to commence in July 20, 2009 and be completed by October 1, 2009.

Construction has begun and Galvin Parkway is closed to through traffic.

During construction, drivers may access the Garden by entering Galvin Parkway ONLY from the north at McDowell Road. The actual driving route to the Garden’s parking lot may change periodically, so all visitors are encouraged to consult the Garden’s web site (WWW DBG.ORG) for updates during this time.

FROM THE EDITOR...

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Laurence Garvie
Messing with the Mesembs: Visiting their Habitat

Where do Mesembs come from? Home Depot, Arizona Cactus Sales, Doug Dawson, ... etc. The answer is “yes” to all. More interesting questions may be “Where exactly do these plants live in the wild unplanted by human hands?” and “What are the growing conditions in that exact spot?” These questions can be best answered by visiting the habitat. To visit the place where the Mesembs grow requires a lot of expense, planning, and time. All this effort to visit a place that looks a lot like Arizona and to see plants that would be easier to find, and perhaps better looking, within a 6 hour drive of Phoenix. Why go?? This may sound like the eternal question we ask mountain climbers. There are a lot of good reasons to visit the habitat other than because it is there. You can see the microclimates each plant grows in and how the plant should look. You can also see many plants that you have never seen before. Using these slim reasons as justifications for going, I found myself on a tour of the Northern Cape area of South Africa. I will share a few observations and attempt to provide some answers to the question of why visit. The observations are not that of an expert and are limited to a few minutes in the year of a plant at any one location.

First a little information about the trip to the succulent-rich Northern Cape of South Africa. The trip was planned, organized, communicated, and executed flawlessly by the tireless efforts of Doug Dawson. Our guide and friend Karel lives in the Springbok area, where he is always searching for new and better sites to visit. The rest of the group included Steve Bract (owner of Mesa Garden and noted plant expert), Steve Martinez (entertainer, and plant enthusiast), Ralph (observer), and Jim (rock hound). Karel and Doug carefully planned a route that allowed us to visit fantastic sites from dawn to dusk each day.

In two weeks we covered a large portion of the Northern Cape, saw countless amazing plants, and took thousands of photos. Doug will be presenting a slide show of this great area at our July meeting, be sure to attend.

The hardest thing for me to understand about the habitat of individual species was the size of their growing areas. Some, like Tylecodon wallichii was visible in many places and other plants like Lithops versis grew in such small areas that crime scene tape could surround the entire population. If the plants are capable of producing thousands of seeds why is the growing area so small? Are the conditions so harsh that few plants can survive? Are the plants so specialized that only a small area has the exact conditions they require? A great example of this would be a fantastic colony of Cheiridopsis peculiaris growing only on the south side of a quartz-covered hill. The plants were densely growing from the top down to a point about two thirds of the way to the bottom of the hill. The question that comes to mind is, “Why are there no more C. pillansii on the lower part of the hill? Water runs down hill and the plants have produced thousands of seeds over the years. What is preventing them from growing? Is it too much or too little water? Are they in the fog zone or out of the fog zone?” Why? If I could figure out the exact conditions in the growing area and what kills them outside of it, I would have more success growing them at home.

As we hiked up many hills it was clear that as you ascended and rounded them different plants would appear because of changing microclimates. Climbing up a hill by moving from one quartz patch to another would also yield clues to growing requirements. The best Mesemb hunting occurred in quartz-covered sections of the ground. It is speculated that the quartz reflects more light and heat allowing the plants a better chance to survive the hot summers and intense light. Argyrodermas, Oophyllums, and some Conophytums were often located in full sun in “pans” on the lower part of the slopes. It might be speculated that the soil would retain water for a longer time than plants further up the hill. “Pans” are difficult to understand unless you have seen one. To me they look like a flat area surrounded by stones or a bank that retain water. These pans, wherever they are located, often have interesting plants growing in them like Lithops, Conophytums, and Crassulas. Further up the hill Conophytums and Adromischus appear in cracks or under bushes. Higher up the hill still you might see different Conophytums, Crassulas, and other Mesembs that seem to live off the fog banks and dew. Many of these plants would be clinging to rock walls and cracks where it would seem that deep watering would be rare. Hiking out of the quartz sprays, where it is hotter and drier, you might find Stapelias, Euphorbias, Tylecodons, and Aloe. Going just a few hundred yards down the road would often yield some different plants that you did not see in any other location.

Seeing how the plants actually look in habitat can be very interesting. I have grown Dactylopsis from seed. It seemed like it was getting too big in the plastic pot so I put one in a clay pot to keep it drier and smaller. I was very surprised to see in habitat they got very big; plastic was the better way to go. Othonna retroflectata for me had long thin stems and a fat round base. I feared the long thin stems were due to over watering, but in situ it looked the same. Cheiridopsis peculiaris formed rather small clumps, unlike others in the species, only a few plants had 5 to 7 leaf pairs. Hundreds of plants had only 1 to 3 leaf pairs. The leaves were much stouter and shorter than the ones grown at home. Argyrodermas found in the full sun were deeply wrinkled despite several good rains. How wrinkled do they get after the long dry summer? Pelargoniums and Sarcocaulons were mostly found in the full sun and once both were growing with Lithops in a very dry location. About half the plants in habitat looked better than any I had seen before.

For two weeks in the early fall the weather was sunny and warm. The nights were cool with heavy dew on some nights. The dew was heavy enough to provide plants with shallow roots plenty of moisture and completely soak our tents.

Habitat pictures in books often do not convey the details of the plant, or the location, or the microclimate. Seeing the plants in their natural settings shed some light on how to better care for them. The adventure and camaraderie was terrific. It was defiantly well worth visiting the habitat of the Mesembs. If you get the opportunity to go don’t miss it. E-mail any questions to clifffielding@msn.com.
Back in November I noticed something had changed in my Agave attenuata. This 20-year-old serpentine giant has traveled over 5 feet, raising its "head" (leaves) and forming an arched "body" (stem). I've walked past it thousands of times, usually giving it little notice. But one November day it stood out - it was going to flower! For the first time!

This agave, though beautiful, is not an Arizona favorite. Native to the plateau of central Mexico around 7000 ft it tends to be sun sensitive. Even with an eastern exposure and irrigation it experiences some sun damage every summer. When the agave was young we had a small tree to protect it but about five years ago the tree died. It continued to grow toward the sun and has survived the sun each year with minimal damage.

With the exception of our occasional extreme winter lows this agave has not been damaged by frost, so no protection was provided this past November. It wasn't a particularly hard frost but the new growth was tender. The stalk that I expected to shoot to the sky only got about 4 feet tall and the leaves were damaged.

Even though frost had robbed much of its beauty, it was fascinating to watch the flowering. There were the typical flowers, seed pods (none seem to have viable seeds), and bulbils. Some of the bulbils seemed to have developed flowers, forming both stamen and pistils. These bulbil flowers were smaller than the typical flowers and I have yet to see if they produce seed. Flowering bulbils seem to be an unusual phenomenon. If someone can enlighten me on this I'd appreciate it.

In My Garden: Agave attenuata
Susan Tyrrel

We are finally into a real Arizona summer with temperatures over 110° F and, as usual, some plants are showing signs of stress. They will recover and after some pruning will mostly be no worse for the severe conditions. Focusing on the highlights of the last two months, in early May two of the best opuntias were the velvet fig (shrub or tree form) with red flowers and O. ellisiana, a shrubby plant, with large yellow flowers. Trees flowering in mid May included Ironwood, Palo brea (one from Sonora and one from Argentina), Jacarpha cinerea, Desert willows, Leather-leaf acacia (A. craspedocarpa). Tipuana tipu with sprays of golden yellow flowers, and A. penutula, which flowered for the first time since the severe damage from the hard freeze of a couple of years ago. Later on into June there was A. amea with rod-shaped golden-yellow flowers, A. millefolia with 2-inch-long flower spikes and Mexican palo verde (Parkinsonia aculeata).

The large shrub, Justicia adhatoda, was finally done flowering in mid June. At about the same time there were small bright red fruit on the Barbados cherry (Malpighia glabra) an evergreen shrub from southern Texas and south, that has done well under a Cascalote. A small shrub from southeastern Brazil and northeastern Argentina that we had never seen before was in flower in Baker's nursery. They identified it as Scarlet wisteria and occasionally sell seedlings. The plant is Sesoania punicea, with a rattlesnake seed pod, and should make a colorful addition to the yard. While not a true desert shrub, the ‘Tropic Look’ says it is fast growing with some of the most beautiful flowers of the genus. Also back from the hard freeze was Chorisia speciosa, which can become a large tree and Ficus petiolaris, which has managed 8 ft shoots from the soil level after having frozen down to almost nothing. The San Carlos hibiscus (Gossypium harknessii) has yellow flowers, which are always surprising on this evergreen shrub in the heat of summer.

The most common Stenocereus varieties here are S. thurberi, the "Arizona" organ pipe (the most abundant columnar in northwest Mexico), S. griseus, often sold here as Mexican organ pipe and S. alamosensis (Rathbunia). They have all been flowering for several months. Others that can do well here are S. gummosus (from central Baja) with larger flowers, and S. prunosus, S. stellatus, and S. benckii, which have yet to flower after 26 years in our yard. These last three are from southern parts of Mexico. The excellent new book by David Yetman, “The Great Cacti,” describes them and many others. This book helped me identify a large tropical looking organ pipe in our yard as S. quercetavoensis. This plant is grown for fruit with “at least seven different varieties of fruits producing a rainbow of colors” and “bring top prices in nearby Guadalajara.” It grows well here although it will be damaged by frosts. Yetman says that S. montanus, which grows “above the coastal plains of extreme Southern Sonora and the foothills in northern Sinaloa,” is easily confused with Pachycereus pecten-aboriginum” (similar spination), which made the identification of small plants in our yard easy.

While the showy aloes flowered earlier in the year, there are still some in the hot months. In mid-May, A. sinkatana was almost done while A. nobilis, with its scarlet flowers, was getting started. While a common listing in older publications, you probably won’t find A. nobilis in recent books on South African aloes. H. Jacobson, in his “A Handbook of Succulent Plants” (1960) lists it as A. nitroiformis var. spinosior. It makes nice dark green clusters that do well in shade. A. rauhii, a small aloe from Madagascar, flowered at the end of May and soon after A. sladeniana from southwest Africa put up its relatively long, sparse pale pink flower spikes. This plant is related to A. variegata and although the books say its native habitat is frost free, it has had no frost problems here. A. pirottai continues to flower as it has for months and now the very ornamental A. karasbergensis is in full flower in a shady spot. One book describes the flower as a “many branched and rebranched panicle with up to as many as 50 sub-laxily flowered racemes pale pink to coral red.” You’ve got to have it!

Around My (or Your) Desert Garden
Bob Torrert
MEMBERS’ PHOTOS

(left) - Echinopsis formosa var. maxima  (right) xPachyloechocereus orcuttii- photos © Jim Elliott, Arizona Cactus Sales

MISCELLANEA

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

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 $2.50. Email me if you want some and how many bags you would like.

Lee Brownson - lsbrownson@cox.net

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RARE PLANTS FOR SALE
My collection of Didiereaceae is for sale. Why? Because I have run out of space, some are too big, and I prefer growing opuntias. Species available include - Alluaudia ascendens, comosa (x2), dumosa (x2), humbertii, montagnacii; Alluauoapipis fiberensis (VERY RARE!!!), marnieriana (RARE); Decaria madagascariensis; Didierea madagascariensis, trollii.

Interested? Email lgarvie@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

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CENTRAL SPINE JULY, 2009
### 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone Number</th>
<th>Email Address</th>
<th>Specializations</th>
</tr>
</thead>
<tbody>
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<td>Doug Dawson</td>
<td>480-893-1207</td>
<td><a href="mailto:dawsonlithops@hotmail.com">dawsonlithops@hotmail.com</a></td>
<td>Specializations include Flora of Namibia, Growing from Seed, Lithops, other Mesembs, and Melocactus.</td>
</tr>
<tr>
<td>Mike Gallagher</td>
<td>602-942-8580</td>
<td><a href="mailto:mgallagher26@cox.net">mgallagher26@cox.net</a></td>
<td>Specializations include Aloes, Haworthias, Columnar Cacti, and Turbinicarpus.</td>
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<tr>
<td>Steve Plath</td>
<td>623-915-7615</td>
<td><a href="mailto:revegdude1@juno.com">revegdude1@juno.com</a></td>
<td>Specializations include Ariocarpus,Astrophytum, Cyphostemma, Echinocereus, Fouquieria, Thelocactus, General Propagation, and Desert Revegetation.</td>
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<td>Cynthia Robinson</td>
<td>602-615-2261</td>
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<td>Specializations include Flora of Madagascar, Growing from Seed, Caudiciform &amp; Pachycaul Succulents, Aloes, Apocynaceae, Burseraceae, Euphorbiaceae, Fouquieriaceae, and Succulent Bonsai.</td>
</tr>
<tr>
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<td>Specializations include Desert Landscaping, Unusual (including Rare Fruit) Trees and Shrubs, Aloes, Agaves, Columnar Cacti, Trichocereus, and Opuntia.</td>
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