Be sure to mark your calendar for the next PEG meeting: Growing Sansevieria in Arizona July 20, 2019, 9 a.m.-11 a.m. in the Whiteman Conference Room (Webster Building) at the Desert Botanical Garden. There will be a variety of species of free plants to get you started growing these beauties or to add to your collection. *Photo: Sansevieria francisii from Wikipedia.*
EUPHORBIAS, A DIVERSE GENUS OF SUCCULENTS  Photos and text by Peter Walkowiak.

Join Peter July 28, 2 p.m. in Dorrance Hall at the Desert Botanical Garden.  Come early and visit, have a snack, browse the library, and bid on plants.

The genus *Euphorbia* is found throughout the world, ranging from small weeds called spurge to large candelabra tree like plants, leaves to no leaves, spines or not, and, every shape in between.  In Africa, succulent *Euphorbias* have filled the niche that is occupied by cactus in the new world.  The many forms of *Euphorbias* mimic the many forms of cacti which often leads to the people confusing them with cacti.  In this talk, I will discuss the care, maintenance, seed, hybridizing, and the diversity of succulent *Euphorbias* for both collections and landscape.

I will make the case for the breakup of the genus into as many as 20 new genera, and most likely, many more.  I will also make the case for my thoughts on the genus based upon morphology and ability to hybridize with other species.  The genus *Aloe* was broken up for the same reasons.  There are those people who would like to place *Monadeniums* back into *Euphorbia*, for instance.  I have never had a *Monadenium* cross with any other *Euphorbia*.  Many *Monadeniums* will not cross with other *Monadeniums*.  When they do, they often produce mules—sterile offspring.  I would guess that this genus should be broken into at least four genera.

With such a high degree of diversity, you can find a *Euphorbia* to match your interests as a collector or as wonderfully diverse specimens for the landscape.

I graduated in 1985 from Cal Poly Pomona with a B.S. in Ornamental Horticulture.  I then worked as manager, production manager and section manager for three wholesale nurseries for 14 years.  I then owned a landscaping business for another 14 years, the last 5 years of which I specialized in succulent landscapes.  During the landscaping part of my life, I restarted collecting plants for my collection.  This led to propagating plants from seed, and thus the seed was sown for the nursery that I now own and have run for the last four years.

My interest in succulent plants really got going in college in 1981-82.  By the time I graduated, my collection had grown to 200 plants.  Many are still alive.  This collection has currently grown to more than 2,000 plants.  The collection consists of cacti, *Euphorbias* and caudiciforms.  (continued)
I am the current president of the Palomar CSS and was on the board for the San Diego CSS. I have been on the board for the CSSA for the last eight years and currently serve as the nominations and sales chair. I served as show chair for Palomar, two times for the San Diego club and once as co-chair for the Intercity Show. To the left, a Euphorbia flower.

**HORTICULTURE UNLIMITED.COM**

This website is filled with great information about growing landscape plants in the Arizona desert. They are based in Tucson where it’s a tad cooler summer and winter but otherwise growing tips work for here. Great pictures of plants and excellent horticultural information. Under the Resources tab, check out the section on cactus and succulents. You’re bound to find something of interest.

Our CACSS library has Dayna Layna Fried's first book: *Design, Build & Bloom*. We have her newest on order: *The Art of Southwest Landscaping*.

**PURPOSE OF THE CENTRAL ARIZONA CACTUS AND SUCCULENT SOCIETY**

The purpose of the CACSS is to:
- study, propagate and cultivate cactus and succulents
- educate members and the public
- aid conservation programs
- support the Desert Botanical Garden and other institutions

Be sure to visit CACSS on the web at: centralarizonacactus.org the Society’s website Facebook Central Arizona Cactus and Succulent Society CACSS Swap and Shop Instagram
PEG POINTS: The Latest from the Propagation Education Group       By Tristan Davis
Photos by Thom Young

Next Meeting: Growing *Sansevieria* in Arizona July 20, 2019, 9 a.m.-11 a.m. in the Whiteman Conference Room (Webster Building) at the DBG.

Our May meeting was extremely successful with 37 people attending and learning to grow cacti and succulents from seed. Everyone was able to start their own seeds for free right at the meeting and take home their very own growing pot all planted and ready to place on their windowsill. Later the same week, several members were already reporting their seeds had germinated and started to grow! Looks like we may have created a few “Seed Fanatics” in the process.

One of the reasons the PEG meeting topics are not announced too far in advance is because I want to be able to adjust topics based on suggestions and feedback that I get throughout the year. Earlier in the year, I passed around index cards to all attendees and asked them to write out at least one topic they’d like to see covered in an upcoming PEG meeting. I received a lot of great suggestions and I am working through them to see if we can cover them in the upcoming months. *Photos: left above Sansevieria bhitalea, right S. eilensis.*

However, one of the topics suggested a couple of times was regarding the genus *Sansevieria*. So, I decided that it was a very good topic to cover as it is not often talked about but it is included in the plants that can be shown at our annual show and sale. One of our members, who has won a few ribbons for his *Sansevieria* plants at the shows, is Thom Young. He is quite the expert on growing the genus and has many really beautiful and healthy plants he grows here in Arizona.

Thom will present some interesting information about this intriguing group of plants, and we’ll cover topics such as:
- What exactly is a *Sansevieria*?
- Where are *Sansevieria* from naturally?
- What species are most commonly grown? (continued)
• What species are recommended for beginners?
• What species are recommended for more experienced growers?
• How can *Sansevieria* be propagated?
• What are the growing requirements for the group?
• Can *Sansevieria* grow in-ground?

Additionally—as is usually the case at PEG meetings—we will have several give-aways of various species of *Sansevieria*, so you definitely do not want to miss this great opportunity to learn more about a fascinating genus.

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**SANSEVIERIA**

A member asks: How often should I water my *Sansevierias*, how much sun can they take and are there any that are full sun lovers?

Visit the club website, choose Newsletters, then Newsletter Index, then Plant Index, and search for the articles below. Find by month and year under the Newsletter tab.

- *Sansevieria* by Phyllis Flechsig, 4/91
- *Sansevieria Planting at Koko Crater Botanic Garden Honolulu, Hawaii* by Ed Eby, 4/91
- *Smitten by Sansevierias* by Sue Hakala, 10/00

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**LITHOPS**

A member asks: How do you grow *Lithops* from seed, and what is the best sun exposure?

Visit the club website, choose Newsletters, then Newsletter Index, Plant Index, and then search for the articles below. Find by month and year under the Newsletter tab.

- *Growing Lithops in Phoenix* by Doug Dawson, 4/16
- *Lithops* (no author), 4/88
- *Lithops* (no author), 11/99
- *Lithops* found within Leo Martin’s From Your President column, 12/00
- *Lithops N. E. Brown* by Leo Martin, 5/00
Many of the Adenium growers in other countries have been using a new approach to germinating Adenium seeds. I have tried this technique, and I like it. So, I’d like to pass it on to you.

In the past, I would fill a red solo cup with soil, lay the cleaned seed on top of the soil and barely cover the seed with more soil. This works fairly well if you can control the temperature, moisture of the soil and light.

This new approach eliminates the soil and makes it much easier to control the humidity, temperature and possibly the light.

I used a container (above) from the grocery store which had sliced meat in it, but anything should work as long as it’s clear and airtight. I was going to use a Tupperware container, but I wasn’t sure my wife would appreciate it.

I first put two paper towels in the bottom of the container and moistened them. My wife buys those smaller paper towels and they worked perfectly. Don’t get them wet as the seed might rot. Next, lay your seed on this paper towel. I don’t think there is any limit to how many seeds you can put in the container as long as you have room to pick up each individual seed. Now, cover the seeds with one layer of paper towel and moisten it. Make sure the top towel touches every seed since the moisture is important for germination. The photo on the left shows that two seeds are making good contact. After I took the photo, I made sure the others were touching.
Put the lid on tight, and place the container in a warm place where it gets bright light. I think 80°F or above is a good temperature. I believe you will have less success at lower temperatures. Here in the Valley, it's often hard to keep anything below 80°F so I don't try, but I really don't want to go above 95°F. I always had trouble keeping the soil moist, but not wet, with the higher temperatures. With this method, I don't need to worry.

If your seed is fresh, they should start growing in several days. The older the seed, the longer it will take. After several days, take the lid off and gently lift the paper towel. You should see the root coming out of the sheath that protects the seed. You may want to gently remove that sheath by sliding it off. As long as it is wet, it should slide off easily. This will probably speed up the process of leaf formation. Here you can see a photo of the seeds with the root growing out and the sheath working its way off.

After the root is out and I see leaves forming, I put the seedling in soil in a red solo cup. The soil is richer than my normal succulent soil, but that helps me keep the seedling moist as it grows. After I'm sure the seedling is established, I will move it to a more normal environment. It may stay in that red solo cup for a year or more, depending on how fast it grows. Here is the beginning of a beautiful plant (photo right).

I hope the description of this method has been informative. I have not tried this method on any other seeds, but it seems like it should work. It may delay growth a bit when the seedling is moved into soil, but I don't think it would be significant. I can say that I have had a much higher germination rate using this method.

**PURCHASED:** I purchased the plant five years ago.

**POT:** It’s never over potted. I use 3-4” terra cotta pots

**FERTILIZER:** Once a year it gets a weak dilution. Springtime is optimal.

**POTTING MEDIUM:** I use 20-25% native dirt, the type that crumbles easily in your hands when damp, 20-25% pumice and roughly 50% sand. Be sure to not use construction or beach sand.

**SUN EXPOSURE:** Full sun when day temperatures are 80-85F or below.

**WATERING:** Main watering occurs during Spring, while it is in growth. In the summer, it is a light misting 1-2 times a week just to keep the roots alive. In winter, it gets a misting once a month.

**FROST PROTECTION:** Absolutely none! Very cold hardy. Note: Must be dry and not consistently wet.

**SPECIAL NEEDS:** I protect it from summer and winter rains that have a potential to drench the pots.

Purchased: At Bach’s nursery in Tucson a couple of years ago.

Pot: It’s in a decorative, glazed pot from Goodwill.

Fertilizer: It has yet to be fertilized.

Potting Medium: 60% Black Gold cactus soil and 40% pumice.

Sun Exposure: It lives under 30% shade cloth.

Watering: It has a hard life and is watered infrequently.

Frost Protection: None, but it doesn’t get too cold in Ahwatukee.

Special Needs: None.
HOW'D YOU GROW THAT PLANT?

Best Cactus of the Show, Best *Mammillaria* of the show and Judge's Choice for a Cactus of the 2019 show: *Mammillaria mazatlanensis*. Grown by Pam Edsall.

PURCHASED: I bought it 19 or 20 years ago from a nursery in the Kansas City area.

POT: The pot was made by Edmund Hunt.

FERTILIZER: I usually fertilize 3 or 4 times a year with the fertilizer that the club sells, 10-16-38.

POTTING MEDIUM: I use Black Gold Cactus mix with extra pumice added.

SUN EXPOSURE: I keep it under 60% shade cloth.

WATERING: I water it once or twice a week during the summer, less when it's cooler and maybe once a month during the winter.

FROST PROTECTION: No frost protection is provided.

SPECIAL NEEDS: It isn't real fussy. Too much sun and it will turn really red. In the past, I would over pot it into a much larger pot because of the wicked fishhook spines, and then I wouldn't have to touch it for 4 or 5 years.
Member Rich Zeh shares his enormous *Parodia gigantea* with us. “I bought the plant from one of our member’s widows many years ago, and have no idea how old it is.” He grows it under shade cloth all the time where it produces big fluffy yellow flowers throughout the summer.

34TH ANNUAL INTERCITY SHOW AND SALE—THE BIG ONE!

The event is August 10-11, 9 a.m.-5 p.m. daily at the Los Angeles County Arboretum, 301 N. Baldwin Avenue, Arcadia, CA. For information contact Tom Glavich 626-798-2430 or John Martinez 805-390-2139. If you haven’t been, you need to go.
The Central Arizona Cactus and Succulent Society Facebook page hit a huge milestone. We now have over 5,000 members! People from all walks of life, in different countries around the world, come together to connect, educate, enjoy, and share through their mutual love of cactus and succulents. You can join the CACSS FB page at: https://www.facebook.com/group/cacss2/

Facebook Facts:

- The Central Arizona Cactus and Succulent Society Facebook page was created on July 31, 2014.
- The group has a current membership of 5,056 and adds over 60 members per month.
- Monthly group activity, including postings of photos and comments, has grown to 3,500 posts per month! Thank you all for sharing your wonderful photos.
- The group has three administrators who act as moderators. Chris Ginkel, Dan Smith and Thom Young are busy every day answering questions, posting information about CACSS, removing inappropriate content, and keeping discussions on topic. They also post on our page and do an excellent job of educating members on growing cactus and succulents. All three are active members of CACSS as officers and/or committee members. Thank you, Chris Ginkel, Dan Smith and Thom Young for all of your hard work and dedication maintaining our social media page!

Each month a photo of a cactus and succulent posted by CACSS FB members is selected for recognition.

Cactus of the Month: *Melocactus azureus* posted June 11 by Eric Lundberg (above left).

Succulent of the Month: *Adenium swazicum* posted June 19 by Mike Harris (right).

Post with Most Likes: Spiral *Ferocactus herrerae* posted June 1 by Johnny Valentine.
A member asks: My *Monadenium montanom v. rebellum* is just a long stalk with a couple of leaves at the end. How can I make it branch out?

*Monadeniums*, like most succulents, need bright sunlight to grow well. If the plants are grown in shade, the stems and leaves become soft and straggly. Plants grown in shade also become very susceptible to pests and diseases.

*Monadeniums* are not picky when it comes to the growing medium. As long as the medium is porous and has enough nutrients for plant growth, they will thrive in it.

Visit Kevin’s website at [philstar.com](http://philstar.com) for lots of growing tips for this and other *Monadeniums*.
A member asks: Do Agaves sometime survive a snout weevil attack without intervention?

Although Agave growers have come to loath snout weevils, the weevils do serve a purpose. When the Agave plant sends up its flower stalk, it changes the carbohydrates within its body into sugars giving the plant added energy to produce, sometimes an enormous stalk.

Researchers think that the tasty tissue, or maybe pheromones, attract the snout weevils. They eat and eat and eat, lay eggs and everyone eats some more. The leaf chewing that the adults do allows the entrance of bacterial rot to the plant, thought to be necessary for the development of the larvae. The whitish grub-like larvae eat deeply into the plant. This process attracts others, including pathogens and bacteria who also play their role. The plant is never going to recover.

In the natural environment, snout weevils are major recyclers all the while cleaning up the desert. In your yard, when the snout weevils finish one Agave, they could move to a healthy plant or move to another dying plant. It’s all just part of the natural cycle, but it would be nice if it didn’t happen in my yard.

To read more about snout weevils, visit the club website, choose Newsletters, Newsletter Archives, Miscellaneous Index, scroll down to the Insects heading. Find by month and year under the Newsletter tab.

- **Agave Snout Weevil: Prevention and Treatment of Agaves** from the Desert Botanical Garden, 3/18
- **Agave Weevils** by Scott McMahon, 9/00
- **Agave Weevils** by Sue Hakala, 9/04
- **Treating Agaves to Prevent Agave Snout Weevil Infestation** by Tom Gatz, 3/01
DOUG DAWSON THANK YOU

By Rita Gosnell

Doug was most generous to give us one of his special workshops. On June 3, we had 24 members attend the workshop which educated us about the origins of scientific plant names. First, Doug spoke about his thoughts on the subject and prepared us for the handouts which were completed by teams of four. The teams got to know each other a little better, and we all began to understand how these plant names originate. There were several people signed up on the wait list. Perhaps we can do another workshop of this type for all those who couldn't attend this one. Doug, your knowledge and education efforts are most appreciated by all!

CACTUS AND SUCCULENT SOCIETY OF AMERICA CONVENTION VIDEOS

CSSA convention videos from the 2015 and 2017 conventions are available for viewing. World renown speakers are at your finger tips. You can't find them on the CSSA website, but you can find them all here: cactusandsucculentsociety.org/cssaarchives/conventionvideos.html. Thanks to the San Diego C&SS for this information.

BEGINNER’S CORNER: SUMMER WATERING

Now’s a good time to review summer watering and summer heat/humidity. Visit the club website, choose Newsletters, then Newsletter Index, then Miscellaneous Index, and search for the articles below. Find under the Newsletter heading by month and year. Also, take a look at the articles under the Summer Watering heading.

SUMMER HEAT
• Good Growing: Summer Monsoon by Debra Korobkin, 7/98
• Good Growing: Sunburn by Debra Korobkin, 6/98
• Growing in the Heat found within Leo Martin’s From Your President column, 6/02
• Hot and Humid Weather and the Plants That Love It found within Leo Martin’s From Your President column, 9/00
• Shade Cloth: Where can I Buy Shade Cloth? by Sue Hakala, 12/18
• Shade Screen Project by Steve Stempleski, 1/89, 4/89
• Summer Watering and Heat by Sue Hakala, 7/17
• Watering Cactus and Succulents During the Summer—Proceed with Caution by Tom Gatz, 5/13
SPECIALISTS TO CONTACT WITH QUESTIONS

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Specializations include growing from seed, flora of Namibia, *Lithops*, other *Mesembs*, *Melocactus*, and miniature cacti and succulents of Arizona.

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Specializations include *Aloes*, *Haworthias*, columnar cacti, and *Turbinicarpus*.

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Manages the fertilizer program.

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**Dean Patrick** 480-759-0312  
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**Steve Plath** 623-238-3342  
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Specializations include general propagation and desert revegetation, *Ariocarpus*, *Astrophytum*, *Cyphostemma*, *Echinocereus*, *Fouquieria*, and *Thelocactus*.

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Manages the pumice pile.

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Specializes in *Adenium*, raising *Adeniums* from seed, grafting and *Adenium* culture in general, and co-manages the Facebook page.

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