# THE XEROPHILE

January-March 2020



Part II of Steven Brack's September trip to South Africa continues with a description and photographs of the succulents of the Hantam region like this *Stomatium pyrodorum*. Story on page 4.

### Tall Tales

The tallest homegrown cactus (*Cereus peruvians*) measures 33.5 m (110 ft) and was grown at the Shri Dharmasthala Manjunatheshwara College of Dental Sciences (India), in Dharwad, Karnataka, India, as verified on 1 July 2015. The cactus was planted on 15 August 2002 and is still growing. (https://www.guinnessworldrecords.com/world-records/tallest-homegrown-cactus-)

As reported in the LA Times on 1 August 19, 1986: The world's tallest cactus, a 78-foot armless saguaro, toppled during a windstorm and died, a former forest ranger says. "It was a beauty all right, but now she's



## **Upcoming Events**

### **Friday 17 January**

Regular meeting. Presentation by Steven Brack: *Out of the Fire and Into the Pan*.

### Friday 14 February

Regular meeting/earlier date. Check website for presentation information.

## Friday 21 February & Saturday 22 February

CAGC Rummage Sale at the Garden Center

### Friday 20 March

Regular meeting. Check website for presentation information.

### Friday 3 April, Saturday 4 April, & Sunday 5 April

CACSS annual plant show and sale, Phoenix, AZ.

## Saturday 11 April & Sunday 12 April

CSSNM annual plant show and sale

## Check the website for updates and changes.

gone," said Frank Casanova, a former ranger with the U.S. Forest Service. The giant plant, estimated to be about 150 years old, is listed in the Guinness Book of World Records as the tallest cactus in the world. (https://www.latimes.com/archives/la-

Continued, page 2



The Cactus and Succulent Society of New Mexico (CSSNM) is a non-profit organization dedicated to interest in, preservation of, and education about cacti and succulents from all over the world. We are an affiliate of the Cactus and Succulent Society of America.

Regular meetings are held at 7 pm on the third Friday of most months at the Albuquerque Garden Center; 10120 Lomas, NE. Details about programs and schedule updates may be found on the website: new-mexico.cactus-society.org.

The CSSNM may be contacted by email at: CSSofNM [at] gmail. com or by snail mail at: P.O. Box 21357

Albuquerque, New Mexico 87154-1357

"The object and purpose of the Society shall be exclusively for the study, appreciation, propagation and promotion of cacti and succulents among growers and collectors; the conservation and cultivation of native cacti and succulents; and, the exhibition of said materials whenever and wherever possible."

#### **Officers**

President	Margaret Todd
Vice President	Becky Wegner
Recording Secretary	Cheryl Haaker
Treasurer	Pia Louchios
Executive Board Members	Penny Hoe
	Lee Graham
	Ralph Peters

### **Appointed Positions**

Program Chair	Steven Brack
Webmaster & Show PR	Ralph Peters
CSSNM Email	Steven Brack
Garden Maintenance	Robert Perz
Librarian	Judith Bernstein
Representatives to CAGC (4)	Steven Brack
	Judith Bernstein
	Becky Wegner
	Sig Lodwig
Affiliate CSSA Representative	Oleg Lagutin
Membership Chair	Lee Graham
Newsletter	Margaret Ménache
Spring Show	Daniel Finley
Spring Sale	Steven Brack
Fall Show–State Fair (info only)	Margaret Todd
Fall Exhibition–Botanic Garden	Margaret Todd

The newsletter is published on a quarterly schedule with issues being emailed to members and posted on the website on or near the first of January, April, July, and October.

If you are interested in submitting an article, please contact the editor, Margaret Menache (margaret [at] margaretmenache.com) on or before the 20th of the month preceding the publication date (December 20, March 20, June 20, and September 20.

Submissions for the April issue should be sent to Margaret on or before 20 March.

## In This Issue

Upcoming Events	1
Tall Tales	1
About CSSNM	2
President's Letter	3
January Program	3
Notes From Africa	4
Kactus Kidz Kolumn	5
Identifying Cacti	6
October Events	9
November Events	10
December Events	11
Membership form 1	12
CACSS Annual Show and Sale Information 1	12

### Continued from page 1



xpm-1986-08-01-mn-19025story.html)

In general, the cardon cactus is "one of the most massive" cacti with reports of sizes up to 18 meters and weights of up to 25 tons, a particularly impressive feat as it is said to have a shallow root system. Note the woman at the base of the plant. (http://www.bashanfoundation.org/gmaweb/conserv/cardon/icardfac.html)

## President's Letter Margaret Todd

Happy New Year Everyone!

I hope you all had an enjoyable holiday. The final CSSNM activity for 2019 was the annual Holiday Potluck. Although it seemed that fewer of you attended than in the past, there was no shortage of good food and camaraderie. It is the one opportunity for all of us to just visit with our fellow members.

Your 2019 officers all agreed to serve again and were duly elected in November. We are now ready to get to work and have scheduled our first Executive Board meeting of the year, with an



agenda that includes approving the president's appointments, the 2021 schedule, and reviewing and evaluating members' suggestions for 2020 actions among other things.

It is also time for us to remember that the first big fundraiser for our Council of Albuquerque Garden Clubs is less than two months away (21 and 22 February). If you're like me, this is the perfect time for a clean out of all those things we no longer use. The pod at the Garden Center is open to receive your donations, and we always welcome donations from your friends and family. I send emails to my friends each January reminding them of the opportunity to donate to a worthy cause that I support, and they have always donated wonderful things.

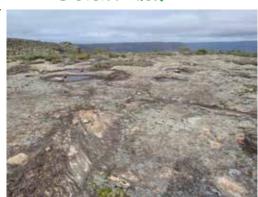
I also encourage you to set aside some time that week (beginning on Wednesday, the 19th) to volunteer some of your valuable time to help set up and/or to assist during the sale. Help is always needed to unload the pod, unpack, sort, and move items to tables. I manage the jewelry and better items in the Patio Room and am always in need of assistance for both helping customers and acting as spotters to prevent the more valuable items from leaving without being paid for.

Which brings me to the CSSNM meeting date change as a result of the rummage sale. We will now meet on the previous Friday, 14 February 2020, at the usual time and place. Please mark your calendars.

I look forward to a productive year for CSSNM. Remember to visit the CSSNM website for the most current information about upcoming meetings, as well as details of past events. You won't want to miss any of our events or programs! \*\*

## January Program: Out of the Fire and Into the Pan Steven Brack

In South Africa there are millions of places where flat exposed rock surfaces erode to create broad flat shallow pans that fill up with a thin layer of rock grit. In these pans many kinds of succulents, bulbs, etc., have adapted to survive. During the cool months in winter and spring there is often overnight dew or frost that collects on the rocks. This gives a steady supply of moisture to the plants. Sometimes in the winter and spring there is a long drizzle or even rain that can fill the pans



dormant. Some pull down under the rocks to hide, while others endure the heat. The program will have photos from nature. \*\*



with water. At times the plants can be submerged.
During the hot dry summer months there is very little moisture so the plants go





## Notes from Africa (Received on 6 September, 2019) Steven Brack

Editor's note: In the October 2019 issue, the first part of two reports from Steven Brack appeared. As a reminder, his opening paragraph from the previous report is repeated here, as he continued (below) his report with the next installment on his trip.

This year I am on two trips to Namaqualand that fall back to back, so I will have six weeks to explore for plants. It is nice to have more time to explore around a single area and give the time needed. All of the time will be spent in Namaqualand, a region rich in succulents found along the west coastal region of South Africa.

In the Hantam region of South Africa, surrounding the present day city of Calvinia, are rocky plateaus with hundreds of

kinds of mostly small succu-

lents. Most of them are small formmat ing mesembs, though many kinds of Euphorbia, Stapeliads and bulbs are to be seen. This region has cold nights in the winter, often with frost forming on the rocks that melts when the sun

rises. This gives a steady

supply of small amounts of



sional winter rain is an added bonus. A lot of the succu-

lents that grow in this region have proven hardy for the southwestern US. are well suited for the rock garden, as they like small root spaces. Sometimes the spring in NM can be harshly

dry, so they do much better with an occasional watering during the dry windy spring months. These plants are available either as plants or seeds from nurseries in the US, not hard to find. Most of them will flower in the early spring.

This is not a complete list of hardy succulents for NM, just a few of the species that grow around the Hantam region that I have seen recently.

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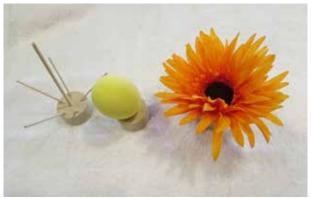
Clockwise from top: Aloinopsis malherbei, A. luckhoffii, A. schooneesii, A. spathulata, A. peersii. Images: Steven Brack.

## KACTUS KIDZ KOLUMN

## Claire Ross

In August 2019, at the Kactus Kidz table, my Mom and I got a lot of questions about how areoles work and the difference between areoles and tubercles. We decided to make three different cactus areole models as a result of these questions. According to Wikipedia, an areole is a "small light to dark colored bump on a cactus out of which grows a cluster of spines." Leaves, offsets (limbs), flowers and fruits can also grow from an areole. Tubercles are cone shaped bumps with an areole on top.

I will now go into more detail about the types of areole models I made for the Kactus Kidz table. The models are of gen-



Barrel cactus (*Echinocactus grusonii*) areoles may have spines, fruit, or flowers.

spines and fruits that come from the areole. We made three areoles for our barrel cactus model that include all three variations.

Our next model was a prickly pear (*Opuntia* spp.) areole. Opuntias can have paddles as well as fruits, flowers, leaves and spines growing out of their areoles. The areole expands when a new paddle is formed, so the base of our paddle model is wider than the bases of the

eral cacti everyone will recognize. The first areole I made was a barrel cactus (*Echinocactus grusonii*). Barrel cactus areoles have flowers,

other Opuntia areole models that we created for Kactus Kidz.

The third areole model we designed was a Cholla (*Cylindropuntia* spp.). Cholla cacti areoles have fruits, leaves, flowers and spines, like Opuntia areoles. The Cholla cacti areoles also can form limbs. Similar to the opuntia areole growing a paddle, the Cholla areole becomes larger when a limb is formed.

I have learned a lot about areoles while constructing these models for our next Kactus Kidz table in August 2020. I hope you have enjoyed the information as much as I have. Next time you wonder where spines, fruits, offsets, flowers and leaves come from, give the areole some credit. \*\*

**About the Author:** Claire Ross is thirteen years old. Despite a busy 7th grade schedule this year, she finds time for the Kactus Kidz Column and the Kactus Kidz event at the annual CSSNM Exhibit at the Botanic Garden. She says, "I first got interested in cacti and succulents when I was eight. I saw the cactus and succulent display at the State Fair. I got a membership to CSSNM for my birthday because of my interest. Now I enjoy growing cacti from seed."



The prickly pear (*Opuntia* spp.) areole can produce paddles and leaves as well as spines, fruit, and flowers.

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Stomatium pyrodorum.

Some comments about the specific genera:

Stomatium pyrodorum has an intensely fragrant yellow flower that opens at night. It smells strongly of honeysuckle.

Antimima, a genus of small mat forming mesembs, has many species, most of which are not in cultivation. The mat is covered with flowers for about a month in the spring.

Aloinopsis are dense mat forming mesembs that grow in rocky gritty soil in full sun. They have interesting leaves with bumps or hairs. The species with hairs on the leaves have been separated into a new genus *Deilanthe*, but often you will still find them under *Aloinopsis*. \*\*



Antimima sp.

# Identifying Cacti A Question from Pia, Answers from Ralph and Steven Summarized by Margaret Menache



Image of rescued cactus taken in May/June 2019 Photo: Pia Louchios



Image of rescued cactus taken at the Botanic Garden exhibit Sept 2019 Photo: Margaret Menache

In June 2019, Pia Louchios sent an image of a rescued cactus for me to publish in the newsletter. Part of her information included modestly different plant identifications from Ralph Peters and Steven Brack. It seemed like a great opportunity to pick their brains on what goes into making a cactus identification at the species level, in particular. In December, Pia sent me an update on the cactus and Steven and Ralph responded to my questions: What factors about the plant made you identify the genus as Escobaria? What factors about the plant made you identify the species (and variety) as you did? What general tips do you have for people who want to be able to identify cacti and succulents? With respect to this last question, Ralph, who also serves as the CSSNM webmaster, reminded me that there is a key to local cacti on our

website: https://www.new-mexico.cactus-society.org/pdocs/Cacti,%20NM%20Identification%20Key--Rev%205-12.pdf So, in contrast to the usual caveat "not to try this at home," have at it!

I summarized their different responses here. Any errors in doing that are, of course, my own.

### Pia's Information

Plant identification: *Escobaria corypantha vivipara* (id by Ralph Peters); *Escobaria vivipara v. arizonica* (id by Steven Brack). Pia noted that the pair of plants (or perhaps it's actually a multi-stemmed single plant) was rescued (with permission from the developer) on land west of her home (south of Hwy. 6, west of I-25) on 4/18/19. It was found by a neighbor while hiking through the open space. The neighbor noticed that it was different from the other cacti in the area (mainly prickly pear). Pia removed the pair of plants with some surrounding soil and planted them in a pot with a drainage hole and with medium size gravel at bottom. She watered them at once to help minimize shock. She added, "not sure if it was necessary, but that's my habit with transplants." Subsequently, she did no additional watering due to frequent rain at the time.

Buds appeared around 20 May, flowers began opening around 22 May and finished around 15 June. Some of you may have seen the plants on display during the Botanic Garden Exhibit - a photograph of the then flowerless plant is shown above on the right. The photograph above on the left is the photograph from Pia of the plants in bloom.

Fast forward to December 2019.

I asked Pia for an update on the plants and to provide a bit of information about what it was that made her neighbor first notice the plant, and then made her decide to rescue the plant and ask for help with identification.

She replied, "These little beauties were noticeable in that they were not the usual prickly pear or cholla that seems to inhabit most of the open land nearby."

She also gave me a very exciting update on the plants. She wrote, "So far, they are doing well in their new location—residing in a pot above ground, surrounded by large rocks to help retain heat on the cloudy and cooler days."

The surprise was that there was a third bloom in August! She told me, "I don't know if that is typical of this variety. I hadn't been doing much in terms of care, as they had been completely on their own before the move to my yard. The bonus came



Fruit harvested this fall. The red arrow indicates seeds inside a pod that has been sliced open.
Photo: Pia Louchios

January-March 2020

some time in October. What I had thought were just spent blooms were actually seed pods! Evidently the local pollinators had been keeping up with their work.

Since this whole process is new for me, I will probably plant whatever seeds I find and see if any develop into seedlings. It's like becoming a grandmother (already have four



Pia's human grandchildren.

grandsons, just as sturdy and active)."

Ralph Peters' Response

In response to the general sense of my questions—how do you know how to identify a cactus, Ralph wrote: "To quote a(n) (in)famous Opuntia expert—'you just know in your gut'. Not helpful, but true...."

Escobaria and Coryphantha are alternate "genera" names —either Escobaria OR Coryphantha. I guess that I wasn't clear. Then, "vivipara" is the species name. Most people would identify the species as "vivipara."

Why is that? From a practical standpoint, in New Mexico there are only about a half-dozen species names to choose from for Escobaria and Coryphantha. Identifiers are:

- general appearance of the stem, and the fact that large plants have multiple stems,
- color, size, shape and number of spines
- color, size and shape of flower
- size, shape and color of fruit, and
- the location where it was found.

Based on these, you are left with only one possible species name-"vivipara." Not all of the five characteristics are necessary to make an identification, but it's nice to have them all agree.

Whether the genus is Escobaria or Coryphantha depends on your personal understanding of whether Escobaria should be split out of Coryphantha, whether the differences are "real."

Steven chose to add a "variety" name, which (at least for me) is always problematic. Sometimes I can find three identifiable cactus "varieties" on a single hill (e.g., Echinocereus engelmannii in Nevada and Arizona), so that makes me hesitant to use varietal names. It all depends.... But then, if the varieties are different enough, someone probably has given them separate species names!!

Unfortunately, some (many) keys to identification have problems when you try to use them. They are fine at the genus level (with exceptions like noted above) and usually are usable at the species level, but at the varietal level they are usually tough (unusable).

To identify plants completely and correctly, one usually needs to know their original habitat, information about their flowers, fruits, and seeds and then information about their stem and spines. The keys usually only use stem and spine characteristics (sigh...) and then they may say something general like "10-15 radial spines."

### Steven Brack's response

Like Ralph, Steven described a lot of his assessment of the plant as the result of 47 years of experience with cacti in New Mexico. "My confidence is based on many years of experience. Ralph said something, too, that is definitely my experince putting variety names on *E vivipara* is more art than science."

Since Escobaria is a widespread genus in New Mexico, it helps to know what to look for. There are several genera of small round cacti with tubercles arranged in spirals. The genera are Mammillaria, Coryphantha, and Escobaria. These three genera have a flower that appears in between the tubercles, and not on the tip of the tubercles where the spines are attached. Here are some basic traits for the three genera.

Mammillaria: there is no groove on the side of the tubercles.



Above: Mammillaria meiacantha from the crest of the Los Pinos Mountains. Enlarged detail of the red outlined area is shown to the right. Note the smooth tubercles.

**Photo: Steven Brack** 



sides, the flower petals are not fringed with cilia, and the seed coat has a pattern of rings with a flat bottom.



Left: Coryphantha obustispina. Enlarged detail of the redoutlined area is shown below, next page.

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Coryphantha robustispina. Enlarged detail of the red-outlined area (previous page) is shown here. An arrow indicates the groove along the top of the tubercle



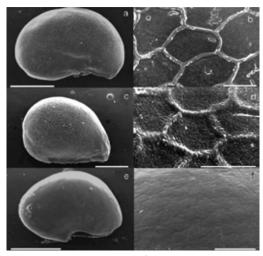
Image of C. robustispina in bloom from Steven's garden. Photo: Steven Brack



Detail from the image of rescued *E. vivipara* taken in May/June 2019. The cilia are barely visible on the open petals but can be clearly seen (red arrow) on the flower bud.

Photo: Pia Louchios

Escobaria: the tubercles have a groove along their sides, the flower petals have fringed cilia along the edge, and the seed coat has a pattern of rings with a scooped out depression near the center of the ring. Of course, identification by seed is not practical in the field in most cases. One can only see the pattern with about a 20x power hand lens. \*\*



Scanning Electron Micrograph of *Coryphantha* species seeds, whole seeds (left column) and seed surface view (right column). First row (a,b): *Coryphantha bumamma*; Middle row (c,d): *C. clavata*; Bottom row (e,f): *C. cornifera*.

B ar= 1mm in a; 5 00μm in c ,e; 5 0μm in b , d and f . Source: FRUITS, SEEDS AND GERMINATION IN FIVE SPECIES OF GLOBOSE CACTEAE (CACTACEAE), Sofía Loza-Cornejo, Teresa Terrazas and Lauro López-Mata, 2012.

Have a question about that succulent that followed you home from a big box store? Forget the name of the cactus you bought at the CSSNM Show and Sale? Did your neighbor give you a cutting of something "that just looked interesting?" Send your questions to margaret@margaretmenache.com or to the general email: CSSofNM@gmail. com and we'll do our best to help.



## October



The program for October was presented by Obie (aka John Oberhausen) of Santa Fe. He was joined by his wife and his long-time partner in cactus rescue, Joe Newman. As they asked on their website page, The Beginning, "Can one person make a difference? How about two people?" Their hopeful answer at the bottom of the same page is "We sure are working on it!" And, indeed they are. Obie's presentation was an inspiring story of engaging the community and ultimately the NM EMNRD Forestry Division.



In addition to a fabulous selection of slides for his presentation, Obie put up his Cactus Rescue banners/posters. They were much admired by meeting attendees. Although not crystal clear here, the poster on the right shows before/after images of landscaping projects while the poster on the left has images of a variety of gardens Obie and Joe have designed.



Barely done with the September Botanic Garden Exhibit, Claire was already busy planning new fun and games for the Kactus Kidz Table in 2020! If you've read the Kactus Kidz Kolumn in this issue, you already know how much progress she's made in preparing for 2020 since I took this photograph at the October meeting. If you haven't read Claire's article yet, check it out on page 5.



The cause of all the excitement? The endangered Santa Fe Cholla (*Opuntia viridiflora*, syn. *Cylindropuntia viridiflora*). The image above was provided by Obie and is a perfect example of how this plant captured his imagination and why it belongs in every garden. Yes, the plant really is endangered and, yes, it is illegal to collect it in the wild without a permit to do so. Luckily for all of us, Obie and company readily provide starts to those who ask. And, especially to those who come help at their assortment of work days for all the gardens they have started, mostly in the Santa Fe area. If you want to know more or get involved, go to their website: www.cactusrescueproject.info. There's also a great interview with them on the Rewilding Earth website: https://rewilding.org/introducing-the-santa-fe-based-cactus-rescue-project/\*\*

## November

November brought us a vote on the design for the next CSSNM t-shirt. Penny Hoe's design using four of her watercolor paintings will grace our next t-shirt. I'm sure that Doris Lodwig will be keeping us posted on when the shirt will be available. This is the perfect opportunity to add to your collection. \*\*



The program was presented by photographer and artist Irwin Lightstone. I will not shamelessly download examples of his artwork because the images are copyright protected, but I will point you to his website with a sincere recommendation that you look at the photographs. https://irwinlightstone.photoshelter.com/index. His photographic publications include articles in the *Cactus and Succulent Journal*, including a cover image in 2007 and a cover for *Haseltonia*, also in 2007.

According to his website, "Believing in the importance of sharing his knowledge, he is an active speaker, workshop leader, and educator about photography." And, share his knowledge is just what he did for us—lavishly illustrated with examples from his photographs.

He began with one of the most basic reminders for all photographers: brace your camera for stability so that your image is in focus. He reminded us that photography is visual storytelling. "Who has just one photograph of their kid? Plants are the same." What is the story that you want to tell with your image? He thinks of photographs as an extended way of looking at something. Perhaps not only in the way that you look at an object or scene to take a photograph, but also in the fact that you will be able to look at for years after the shutter has clicked.

We are also fortunate, in this digital age, to be able to experiment wildly in our image-making. "Digital is free. Keep the best, chuck the rest." Don't be afraid to make mistakes.

As you think about framing your image, think about the story you want to tell, lead your viewer through the image with a real path or by framing. Photograph things that interest you.

In the intermission between the business meeting and the monthly program, Sig shared more tips about my favorite plant, the jade tree (*Crassula ovata*). His jade trees bloom



Depending on the story you're telling, you might want to focus in on leaf patterns or flower detail or you might want to show the entire plant. If the plant is in a pot, make the edges of the pot a feature of your image.

One new technology that Irwin uses extensively is "focus stacking." This method takes many images at slightly different focuses and then, using software, stacks the images so that the entire image is in crisp focus. The result is breathtaking.

Irwin said his sacred rule is to enjoy making photographs. He added, "Always remember that the best camera in the world is the camera you have with you!"

As you go forth to create beautiful images of your own, I will close with one last very real caution Irwin gave us. Many cameras now automatically add GPS coordinates to the metadata. Check the settings on your camera to turn that feature off if you will be sharing your images online. Locations can be used by unscrupulous individuals to steal plants. \*\*

How inspired were you by Irwin Lightstone's tips for better plant photography? What about by Penny Hoe's beautiful watercolors?

Send your images to margaret@margaretmenache.com for publication in a future Xerophile issue!

## December

As always, the December potluck is an opportunity for our members to spend time visiting with each other as they enjoy lots of great food and interesting presentations!



	MEMBERSH	HIP APPLICATION	NC	
Name:				
Address:				
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Tel No.:				
How do you grow? Greenhous Favorite genera:			_ Other <sub>.</sub>	
Suggestions for a program:				
Volunteer to give a program?				
Volunteer for: Officer:	Co-Chair an Event:			
Other:				
Do you: Buy plants locally				
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Complete this app	lication and send it to made ou	o the address below ut to the CSSNM.	with your	check for \$10.00
For more information, contact:				
CA	CTUS and SUCCULE		EW MEXIC	0
	P.O.	. Box 21357		

Albuquerque, New Mexico 87154-1357

Beautiful and bizarre cactus and succulents will be on display as members of the Central Arizona Cactus and Succulents Society showcase potted specimens.

Our Annual Show and Sale will be open to the public Friday and Saturday, April 3 & 4, 2020 9:00 AM – 5:00 PM, Sunday, April 5, 2020 9:00 AM – 4:00 PM. Located at Desert Botanical Garden, 1201 North Galvin Parkway, Phoenix, Az 85008

Entrance included with membership or Garden admission

For more information: centralarizonacactus.org