



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

January 2017

Thursday January 5, 2017

"Natural Selection: A Cross-Section of Biodiversity in South Africa"

Presented by Jan Emming



In September 2016, Jan Emming joined five other members of the TCSS to make a several-week-long trip to the marvelous nation of South Africa. The excursion was specifically designed to take in many of the natural features of this very diverse country. While succulent plants were definitely a part of the itinerary there was much time spent on nonsucculent botanical features, as well as

the various big game and smaller animals that South Africa is justifiably famous for. From elephants to elephant food trees (*Portulacaria afra*), penguins to cycads, and thornbush to fynbos, Jan's program will highlight some of the country's best natural features."

A note on the program itself: We did see numerous succulents, but we spent a greater share of our time in regions that are better known for nonsucculent plant species and big game animals, so the program will reflect this. I believe that many TCSS members have seen great programs that focused almost entirely upon the most succulent-rich habitats of the Western and Northern Cape Provinces, most notably the Karoo, Richtersveld, Namaqualand, etc, which were not actually regions we visited. We did spend two days in the Little Karoo and items we saw there will be reflected, but the program has lots of photos of animals, intriguing nonsucculent plants, and less-seen succulents in the north and east of the country. I am pleased with the numerous good photos I captured and I think that the TCSS membership will be as well.

Jan Emming has been a member of the Tucson Cactus and Succulent Society for 17 years, joining shortly after he moved to Arizona in 1999. That was the year he purchased a large, off-grid 40 acre parcel of land in the scenic and biologically diverse Hualapai Mountains south of Kingman, Arizona, where the Sonoran Desert merges with the Mojave Desert. This ecological conjunction brings together both saguaro cacti and Joshua trees, alongside a whole range of other species. Since then he's been working on accumulating a large horticultural collection of plants grown outdoors in the ground, mainly succulents but also other xerically-adapted trees, shrubs, and bulbs. Desert Sense Nursery at Destination:Forever Ranch



and Gardens offers tours and plant sales by appointment. Jan assures people that the detour off of the main roads is worthwhile if they happen to be in the area!"

All our members that live within traveling distance to our meeting location should attend this excellent program presented by Jan Emming. We will also have some wonderful plants in our plant raffle, lots of great refreshments and excellent free plants offered to everyone by the club.

Thursday, February 2, 2017 at 7:00pm
Program Presentation by Guillermo Rivera
Program title to come, but will present Argentina



President's Message

Happy New Year! Thank you for your support of the slate of Officers and Board Members.

Welcome to the new Board members Don Morehart and Thomas Staudt and re-elected members Teresa Curtis and Peter Ertman who all will serve till December 31, 2019. The current officers were all re-elected

and will serve 2 more years.

Leaving the Board are two stalwarts who have contributed immensely to our success. Val Little organized and managed the sale of the Rainbow Garden Bookstore donation. This was a huge undertaking and Val was the perfect person with great management skills to do this job handling thousands of books and journals and producing substantial income for the society. Val also played a substantial role in securing about 50 Hesperaloes for Pima Prickly Park. You need to visit the entrance to see what a difference these plants have made.

Caryl Jones has grown our education programs from great to spectacular. The "Stemazing" programs to teach teachers is raved about. The novice program for members was a huge success and she continued to provide leadership for Science Nights at schools and the SARSEF program. Caryl will still be involved in the education Committee. We certainly appreciate all she has done for clearly making education the important issue.

As many of you know, I have retired from The University of Arizona, College of Pharmacy, after 55 years of service. I now have a little more free time so I have started to volunteer on

Thursday mornings at Pima Prickly Park. What fun!! Come join us and spend a couple of hours improving this facility.

Recently, a Facebook entry talked about how proud a cactus person in the Phoenix area was that they saved a bunch of plants in a right-of-way that was going to be widened, without permits or tags. This flies in the face of Arizona Law which is so important to the protection of our native flora. Please familiarize yourself with the State Native Plant Protection Ordinance (NPPO). We are very sensitive about any violation of this no matter what the situation. We have rescued close to 80,000 plants since our rescue program was started in 1999. We have purchased permits and tags for every one of those plants as required by law. Even though it was not one of our members, when anyone thinks they are above the law it jeopardizes our program. Information about the NPPO is on our web page under Cactus Rescue.

Great News! Our 2nd Edition of the Field Guide has gone to press and will be available mid-January. It will have 2 new plants and many new photos. You will need to have this updated edition plus what a great gift to a friend.

We have started working on Sonoran XII (April 27, 28, 29, 2018). Hotel Tucson Civic Center (InnSuites) is being remodeled and the lobby is now complete and it looks spectacular. Stop by and take a look. Let us hear about your ideas for programs and workshops.

Besides our Spring Home Tours we are working on the potential of Nursery tours in the spring or fall.

Thank you for your support.

Dick Wiedhopf, President

Did You Know ?

T'was Winter in Tucson
And all through the Park
Not a creature was stirring,
Not even a lark.

The Hesperaloes were
nestled
All snug in their beds.
While their neighboring
Agaves
"Nodded their heads."

Repairs in the shop mended
our cart.
And the Milkweed Patch was
given a start.
Cholla and Prickly Pear were
planted as well.
The pea gravel spread looked
really swell !

The berms were all trenched
And the Barrels were planted.
Cactus Wrens in their "boots"
Were ready for Santa.

Did Santa actually visit?
Well....there's one thing we
know....
His Elves were at work
Helping PPP grow !

Each took to their tasks
At the top of their game.
You know them as well...
So let's call them by name:

Thank you : Linda and Cathy
And Tom and Jessie.
Dick, Linnea, Kristine
And Joe and Patsy.
Jim, Greg, and Louise
You each are the best !
With Holidays here we wish
you some rest !

-----Cari Wright

Photo by Vonn Watkins



FROM THE FLORILEGIUM

To start off the New Year, here are progress updates on our ongoing botanical art projects.

The Sonoran Desert Florilegium:

Jurying for the 2015-16 submittals for the digital Florilegium has been completed, and of the 96 works that were submitted, 76 were accepted into the Florilegium. The jurors were Gene Josephs, Chris Bondante, and Margaret Pope. There are 14 artists represented in the Florilegium from Tucson, Phoenix, and Denver.

Anyone unfamiliar with the digital Florilegium or florilegia in general can read about the project in the October 2014 Desert Breeze or on our website (www.sonorandesertflorilegium.org).

All 76 works in the Florilegium can be viewed sequentially in a gallery section, or single works can be selected for viewing from a 'Browse' page. Each work has a dedicated page with a zoom function for viewing the intricate details of the plants portrayed in the art. For the scientific botanical illustrations in the collection, annotations are provided next to the artwork to describe the plant structures represented in the drawings. Additionally, brief biographies are presented for the 14 artists.

Sixty-nine species of native Sonoran Desert plants are represented in the Florilegium, and an alphabetical species list is included on the site. We are currently working to provide a species profile for each plant.

If you want to see these fascinating and informative works of art, the Florilegium Program's website home page has a quick link to the Florilegium's 'Browse' option.



Parkinsonia microphylla, Foothill palo verde
© 2015 Susan E. Ashton, Pen and ink

The Legumes of Arizona:

Included in the 76 works accepted into the Florilegium are 21 botanical illustrations by 9 artists that were prepared for the Desert Legume Program's upcoming publication, *Legumes of Arizona: An Illustrated Flora and Reference*. The book, which is expected to be published in 2017, will include 273 botanical illustrations by 30 artists from Tucson, Phoenix, and Denver. A number of previously published works will also be included. The drawings have been prepared from live plants, herbarium specimens, and photographs.

The Joseph Wood Krutch Garden Florilegium:

The first botanical illustration for this florilegium was accepted in 2016 and is now being held in Special Collections at the University of Arizona Library. The painting of *Opuntia basilaris* is by Chris Bondante and can be seen in the September 2013 Desert Breeze and in the Sonoran Desert Florilegium (all of the works accepted into the Krutch Garden Florilegium will be automatically accepted into the Sonoran Desert Florilegium). Many of the artists who have been contributing works to the Legumes of Arizona project have also committed to completing illustrations for the Krutch Garden Florilegium. The Sonoran Desert Florilegium Program is currently working with the Campus Arboretum to raise funds to purchase these illustrations. More information about this project can be found in the May 2015 Desert Breeze.

Accompanying this update are works by two Phoenix artists that were accepted into the Sonoran Desert Florilegium. The pen and ink drawing of *Parkinsonia microphylla* is by Susan Ashton (see the December 2013 Desert Breeze) and was prepared for the Legumes of Arizona project. The watercolor painting of *Oenothera caespitosa* is by Gillian Rice (March 2013 Desert Breeze).



Oenothera caespitosa, Tufted evening primrose
© 2015 Gillian Rice, Watercolor

Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

Publications

Constance Elson
Jim Zaino
Patricia H Waterfall
Marie Hirsch

Education

Leo M Jacques
Patricia King
Anne Moore
Lee Oler
Yvonne Stokes
Jan Konstanty & Pat Wallace
Janet Swanson
Barbara Kelly
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Thomas Pringle

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Carl Koprowicz & Sharon Eisenhower
Ralf Holzheu
Patricia H Waterfall
Lee Oler

Pima Prickly Park

Joe Bacik
Constance Elson
Ralf Holzheu
Sharon Atwell
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Marian Alaback

Monrad Ferocactus Garden

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David Scott
Moira Shannon
Michael Tamarack

Succulents of Coastal Sonora

Please contact Tom Van Devender directly if you are interested.

Tom and Ana Lilia are offering a trip along the coast of the Gulf of California in Sonora during March of 2017 to see the amazing diversity of succulents. Please take a look at the tentative schedule, come to our regular meeting on October 6 where you can talk with them and get more insight to this opportunity. yecora4@comcast.net

Description:

- Guides Ana Lilia Reina-G. and Tom Van Devender (yecora4@comcast.net)
- 6 day trip; March 17-22, 2017
- Personal high-clearance vehicles. Free zone – no car permits or visas. Need Mexican car insurance
- pay for food and lodging (5 nights), boat ride.
- *Fouquierias* (4): *columnaris*, *diguettii*, *macdougalii*, *splendens*
- *columnar* cacti (6): *Carnegiea gigantea*, *Ferocactus diguettii*, *Lophocereus schottii*, *Pachycereus pecten-aboriginum*, *P. pringlei*, *Stenocereus alamosanus*, *S. thurberi*
- Gulf of California views, beaches, seafood
- Plant walks to see regional species. Transition from Sonoran Desert to coastal thornscrub
- Trip limit: 20 people. Trip fee: \$350

Tentative itinerary:

Day 1 Tucson-Pinacate-Puerto Peñasco-Puerto Libertad

Sights: Organpipe National Monument pass through, Pinacate Visitor Center, *Lophocereus schottii* dunes, coastal drive
Lodging: Puerto Libertad

Day 2 Punto Cirio-Puerto Libertad

Sights: boojum trees, sand dunes, Gulf of California views
Lodging: Puerto Libertad

Day 3 Puerto Libertad-Bahía de Kino

Sights: coastal travel with two or three rich succulent desertscrub stops
Lodging: Bahía de Kino

Day 4 Bahía de Kino-San Carlos

Sights: giant cardón forest, *Fouquieria digueti* dunes, sunset from Mirador.
Lodging: San Carlos

Day 5 San Carlos-la Mesteña-San Carlos

Sights: Estero El Soldado salt marsh reserve/mangroves, very diverse succulent scrub/ethnobotany walk in coastal thornscrub, private beach
Lodging: San Carlos Hotel MarinaTerra

Day 6 San Carlos-Hermosillo-Tucson

Sights: *Fouquieria macdougalii* Sonoran desertscrub
Rancho la India

Holiday Party Honors



The December 4, 2016 holiday party was attended by close to 150 members and family. Thanks to Patsy Frannea and her refreshment committee and to all the attendees who brought special dishes for a great meal.

Doug Rowsell (says it is the last time) decorated the tables with over 60 dish gardens he made plus about the same number of Poinsettia plants. The room looked really festive and everyone was excited about winning a dish garden.

Of course the best part of the program for me is to be able to honor several members for their service.

Kris Thompson, Tom Ganser and Bryon Hinton, Jr. were given the President's Service Award for all the contributions they have made over the year in time and energy to benefit the society.

Donna and Robert Ellis received the President's Special Service Award for their long time service to the society.

Vonn Watkins was awarded Lifetime Honorary Membership for his years of outstanding service and leadership. There is no one more deserving, considering all he does for this society.

Congratulations to the awardees. Some of the photos are included in this newsletter.

We finished the day with our usual gift exchange. I hope everyone got something they will enjoy. Thanks to Les Rancourt who really knows how to wrap a gift. (see photo)



TCSS BOARD

Officers

President: Richard Wiedhopf • president@Tucsoncactus.org

Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Susan Durham
secretary@Tucsoncactus.org

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board@Tucsoncactus.org

(terms expire December 31 of year indicated)

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Garden Tours: Bill Salisbury • tours@Tucsoncactus.org

Field Trips/tours Rob Romero/Joie Guinta
trips@Tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, January 19, 2017

TCSS Web Page:

www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

**Bring your friends, join in the fun and meet
the cactus and succulent community.**



Cacti Rescued - Since 1999
370 Rescues - 27,212 Volunteer Hours

Please see our Website Calendar for the next rescued cactus sale. They are scheduled at various times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus Rescue sites. Please email us as much information as you can from new project signs or from other sources to **Site@TucsonCactus.org**. Attach a photo of the sign if you can. Note, we do not remove plants from residences.

January 2017

Thursday, January 5, 2017 7:00pm

"Natural Selection: A Cross-Section of Biodiversity
in South Africa"

Presented by Jan Emming

Tuesday, January 10, 2017 7:00pm

Board meeting at Ward 6 City Council office at 3202 E First St

January Meeting Refreshments

Those with family names beginning with
A - H, please bring your choice of refreshments to the
meeting. Your generous sharing will
be greatly appreciated and enjoyed!



This map is for location only. It is not to scale.

Sky Islands Public High School • 6000 E. 14th St.



Desert Breeze

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February 2017

Thursday February 2, 2017

“An exploratory trip to Northwestern Argentina”

Presented by Guillermo Rivera



Guillermo's presentation will cover the habitats of several provinces from central and Northwestern Argentina, from salt flats to high elevation Puna habitats. *Gymnocalycium*, *Echinopsis*, *Parodia* among many others will be well represented, as well as some bromeliads and some wildlife. This presentation is more than a simple travel log as it addresses the importance of habitat knowledge in order to determine the validity of plant names and the issue “too many names for the same plant”. Diversity and variability of plants in habitat within populations and between populations will be addressed. The importance of habitat knowledge will be discussed and its significance in plant taxonomy.

Guillermo Rivera was born in Argentina. Owner of Plant Expeditions (former South America Nature Tours), a company dedicated to the organization of tours for the last 15 years, throughout South America (Chile, Argentina, Brazil, Peru, Colombia, Bolivia, Ecuador), Mexico and South Africa, Madagascar, and Namibia with emphasis on plants (bromeliads, cacti, and orchids), and birding. Former researcher at the University of Cordoba, Argentina. BS degree in Biology, University of Cordoba and MS Marine Biology. Northeastern University. PhD in Botany University of Cordoba

Next year we are planning another trip to Namibia, Ecuador, Bolivia, and a combined Chile-Patagonia venture. All these trips will focus on the cactus and bromeliad flora of these places. If you wish more information about planned trips, please visit www.plantexpeditions.com



To contact Guillermo directly, info@southamericanaturetours.com or plantexpeditions@gmail.com

Be sure to attend the February program and enjoy the company of friends and visitors. Excellent refreshments, raffle plants to

Thursday, March 2, 2017 at 7:00pm

Our March program will feature Jeff Moore.

Jeff is the author of a very recently released book, “ALOES & AGAVES in cultivation”. He is also the owner of Solana Succulents, Solana Beach, California.



President's Message

A survey was sent to every member as part of the membership renewal mailing. The results from the surveys returned are interesting and your comment very important to me and to the Board of Directors. Many thanks to Val Little who put together the results of the survey. Our goal has always been to make the society appealing in some way to every

member. That is why we have a diversity of activities in hopes that you will find some that really interest you. There is not an expectation that you will participate in every activity. That would be a real problem if 1,000 members came to a meeting or went to rescue. It would be chaos.

The survey actually reflects that. Here are some of the response to the questions. If you apply the percent (%) to 1,000 members you get an idea about the numbers interests of our membership.

What are your favorite TCSS activities? Cactus Sales 55%; Newsletter 50%; Rescues 50%; Sonoran Conference 50%; Monthly Meetings 47%; Home Tours 35%; Website 25%; Good Time Silent Auction 24%; Holiday Party 15%; Pima Prickly Park 5%. Don't forget we asked about your favorite activities.

Why do you belong to TCSS? Learn about C & S 40%; Rescue program 12%; Love C & S and the People who feel the same 30% and lots of other reasons 18%.

If you could change one thing about TCSS, what would it

be? What additional programs or activities would you like TCSS to offer? There were so many great answers and a lot of excellent suggestions for the Board to respond to. We are addressing those things which we control and have started to work on many of your suggestions.

Technology will make it possible to record programs and make them available to members by some controlled method. If any of you have experience in this technology we would certainly appreciate your input. The intellectual property of the speaker must be secure and the availability of these talks should be restricted to paid members. This is all possible and would help those who can't make it to meetings to get the benefit of great speakers.

The Board is making some simple changes in our meeting procedures. Raffle and donor prize tickets will be available in the hallway only prior to the start of the meeting. Also all membership business will take place there. When the meeting is about to start, these activities will stop and will be available again at the break. Members and guests will have to wait till the break to complete any transactions. No transaction will take place in the meeting room during the meeting. There will be a little confusion at the next meeting but we hope that signage and courtesy will win out.

Thank you all for your patients during the membership issues with the post office. Everything is back to normal. Anyone who has not renewed will have received a 2nd notice as a gentle reminder. More than 72% have renewed.

Thank you for your support.

Dick Wiedhopf, President

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FROM THE FLORILEGIUM

One plant that deserves a spot in every drylands herb garden is the chocolate flower, *Berlandiera lyrata*, one of the more attractive of the many yellow flowers found in the Sonoran Desert. When in bloom, its yellow petals, with striking red veins on their lower surface, surround a deep maroon center. At the base of each flower head is a whorl of broad green bracts that remain after the petals drop, giving the plant another of its common names, “greeneyes”. And yes, chocolate flower does indeed have the aroma of chocolate, particularly in the early morning. Pulling the petals from the flower head releases the distinctive fragrance, and the stamens have a chocolate flavor when eaten.

The chocolate flower is in the sunflower family, or *Asteraceae*, and as such it has an unusual floral structure. There are actually two different types of tiny flowers (florets) that make up what we see as a single flower with its array of petals. Each of these petals has a very small reproductive structure attached at its base. At the center of this ring of petals are numerous small disc flowers arranged in a spiral formation. The sectional diagram shown here by Lucretia Hamilton provides a simple outline of how these two types of flowers are arranged.

Next to this diagram is a botanical illustration of *Berlandiera lyrata* by Carolyn Hitchcock that is one of the artworks in the Sonoran Desert Florilegium. In Carolyn’s drawing, the growth habit of the plant (Fig. 1) is presented in graphite and shows single flower heads supported by long stems growing from a cluster of basal leaves. To the right are enlargements of the floral structures presented in a combination of graphite and colored pencil. Looking at a flower head from the front (Fig. 3), you can see the yellow ray flowers with the dark maroon disc flowers

standing behind. A complete ray flower is shown in Fig. 4, with both the upper (a) and lower (b) surfaces, and an enlarged disc flower is shown in Fig 5. The habit and Fig. 6 show the deeply-lobed, lyre-shaped leaves of the plant that are referenced in the species epithet, “*lyrata*”.

The genus *Berlandiera* was named by the Swiss botanist Augustin Pyramus de Candolle to honor Jean Louis Berlandier (ca. 1805–1851), a fellow botanist, physician, and plant collector. In 1826, Berlandier was sent to Mexico by a group of botanists in Geneva, including de Candolle, to collect plants in the state of Coahuila y Tejas, a part of Mexico where there had been little botanical exploration. Over the next five years, Berlandier sent some 52,000 plant specimens back to Geneva.

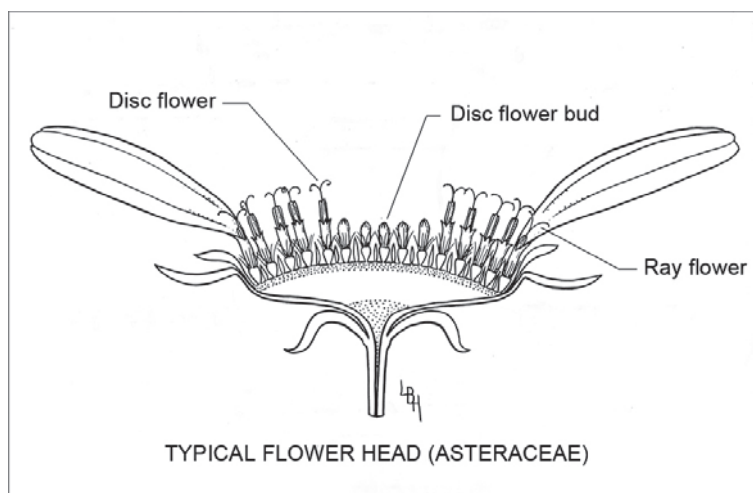
While making these collections, Berlandier served with the *Comisión de Límites* (Boundary Commission), a scientific and surveying expedition into Texas that resulted in the recommendation in 1828 to stop the United States from acquiring Texas. After serving on the Commission, Berlandier settled in Matamoros and worked as a physician and pharmacist while continuing his plant collecting. During his time in Mexico, he saw the Texas Revolution, the annexation of Texas by the U.S., and the resulting Mexican-American War. In the midst of these events, he compiled considerable botanical, zoological, and ethnological information gathered on his expeditions, complete with very competent illustrations. In 1851, Berlandier died while attempting to cross the swollen San Fernando River near Matamoros.

Carolyn Hitchcock’s drawing of *Graptopetalum rusbyi*, also part of the Sonoran Desert Florilegium, can be seen in the August 2013 issue of *The Desert Breeze*.

CORRECTION: The Florilegium update in the January 2017 *Desert Breeze* noted that the Desert Legume Program’s upcoming publication, *Legumes of Arizona: An Illustrated Flora and Reference*, would include 273 botanical illustrations by local artists. The correct number of illustrations being prepared for the book is 120.



Berlandiera lyrata, Chocolate flower © 2013 Carolyn Hitchcock
Colored pencil and graphite



Acknowledgement of Contributions

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Publications

Baird & Darla Thompson
Swca, Inc / Russell Waldron

Education

George & Emojean Girard
Helga Egertson
John J Ross
Joey Tanner Barbee
Julie Hallbach & Don Featherstone
Bill Sievers & Linda Matson
Susanna & Lucas Schippers
Ellen Morell & Charles Sisson
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Jerry & Colette Price
Richard & Rene Dulaney

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John & Ann Tundermann

Conservation

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Barbara Walker & Feigin
Jim & Steffen
Marsha Turkin
Christine Flanagan & Allan Morgan
Judith Goodrode & Bob Zugar
Joy Perry & Family
Stephan Baier & Family
Douglas Williams & Family
Jerry & Colette Price

Florilegium

Barbara Walker & Phil Feigin
John Gilkey & Laurel Cooper
Carol J Owens
Dick & Sue Hildreth
Margaret Pope & Family
Matthew Johnson
& Patricia Rorabaugh
Carl Englander & Paula Borchardt

Pima Prickly Park

George & Emojean Girard
Barbara Walker & Phil Feigin
Christine Flanagan & Allan Morgan
John Gilkey & Laurel Cooper
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Kevin & Helen Barber
Chuck Huckelberry & Family
Colette Altaffer
Berni Jilka Family
Martha & Abby Taylor

Special Designations

Monrad Ferocactus Garden
Jim & Electra Elliott



PIMA PRICKLY PARK

DID YOU KNOW?

Volunteer Jim Bliss has worked his magic in not only locating supplies of rocks for the park, but in also placing them strategically throughout as erosion barriers. WONDERFUL! We send you a special "shout out" of thanks.

WHAT'S HAPPENING ?

A shade structure was generously donated to the park. It will be able to house the very largest of plants that are rescued. The Arizona Conservation Corps assisted with planting on the grounds and assembling the shade structure.

From Linda Heisley:

"Great planting progress made today with 4 1/2 people digging holes. I was the 1/2 trying to keep plants in front of the crew! Cathy worked on plans to reorganize the hoop house & Jim working on slowing erosion on the hill with the bench. Next week we will plant prickly pear inventory along the fence west side of the park. Hopefully a little rain will fall this weekend.

Thanks everyone!"

ASK PRICKLY PARK

If you have any specific questions regarding PPP, please contact us at: Park@tucsoncactus.org. Come and enjoy the park and see if you can find the "Bee Tree". ----Cari Wright



TCSS BOARD

Officers

President: Richard Wiedhopf • president@Tucsoncactus.org

Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Susan Durham

secretary@Tucsoncactus.org

Treasurer: Linda Bartlett

treasurer@Tucsoncactus.org

Board of Directors:

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(terms expire December 31 of year indicated)

Teresa Curtis (2019)

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Donna Ellis (2017)

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Free Plants: Donna Ellis • plants@Tucsoncactus.org

Floilegium: Margaret Pope • art@Tucsoncactus.org

Librarian: Joie Giunta • librarian@Tucsoncactus.org

Prickly Park: Linda Heisley • park@Tucsoncactus.org

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Refreshments: Patsy Frannea • refreshments@Tucsoncactus.org

Technology: technology@Tucsoncactus.org

Research: Doug Rowsell • research@Tucsoncactus.org

Garden Tours: Bill Salisbury • tours@Tucsoncactus.org

Field Trips/tours Rob Romero/Joie Guinta

trips@Tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Wednesday, February 22, 2017

TCSS Web Page:

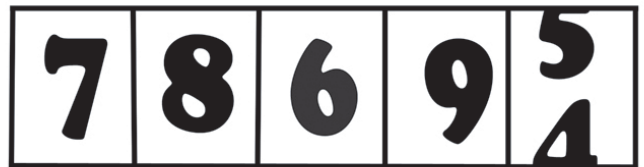
www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

Bring your friends, join in the fun and meet
the cactus and succulent community.



Cacti Rescued - Since 1999
370 Rescues - 27,212 Volunteer Hours

Please see our Website Calendar for the next rescued cactus sale. They are scheduled at various times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus Rescue sites. Please email us as much information as you can from new project signs or from other sources to **Site@TucsonCactus.org**. Attach a photo of the sign if you can. Note, we do not remove plants from residences.

February 2017

Thursday, February 2, 2017 7:00pm

"An exploratory trip to Northwestern Argentina"

Presented by Guillermo Rivera

Tuesday, February 14, 2017 7:00pm

Board meeting at Ward 6 City Council office at 3202 E First St

February Meeting Refreshments

Those with family names beginning with
I - P, please bring your choice of refreshments to the
meeting. Your generous sharing will
be greatly appreciated and enjoyed!



Sky Islands Public High School • 6000 E. 14th St.



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

March 2017

Thursday, March 2, 2017

"Aloes and Agaves in cultivation"

Presented by Jeff Moore

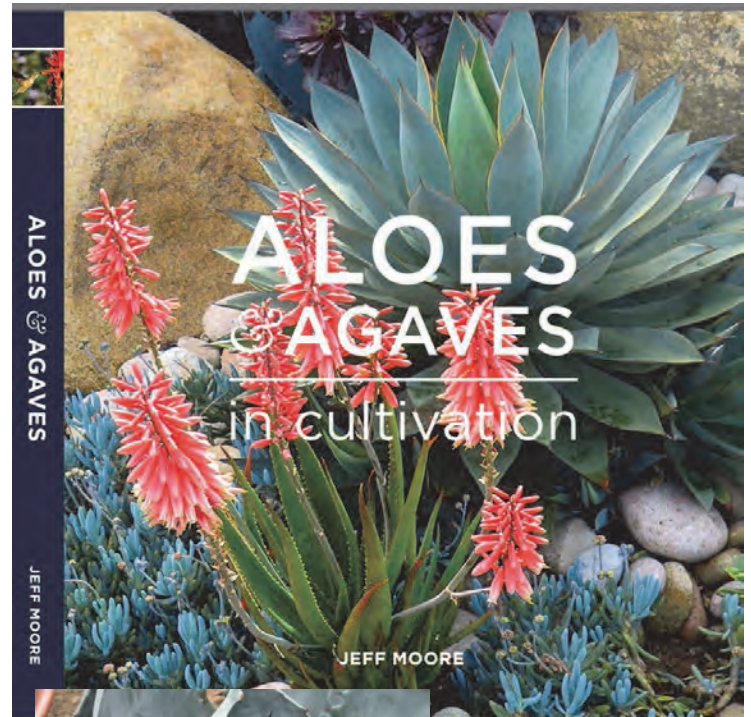


This program will follow the flow of Jeff's new book, "Aloes and Agaves in cultivation". There will be a lot of nice images on both genera (and a few of the related genera as well), and the emphasis will be on these plants in cultivation, not habitat. Of course cultivation for me is California, which is different from Arizona, but we'll talk about which plants will survive your climate and which won't. I'm sure I'll learn a bit from the audience on that subject. This book comes from my passion for aloes, and a lesser

degree agaves, which I became more enthusiastic about as I put the book together. I combined them in one book as they make similar statements in the landscape, and quite a few aloe nuts also like agaves, and vice versa. I'll talk about the broad differences for those that are new to the succulent club.

Jeff has operated his nursery in Solana Beach for close to 25 years now, and has really enjoyed the book-making process and the opportunity it has given him to travel in California and Arizona to speak with the clubs. He is working on a third book now on soft succulents - aeoniums, echeverias, dudleyas, crassula, sedums, kalanchoes, etc..... Looks good on the computer, and he hopes to have it ready by the end of the year.

Be sure to come and enjoy Jeff's program that will introduce his book and give his insight on the cultivation of aloes and agaves. You may win a great plant, enjoy some refreshments and get your free plant before going home for the evening.



March Meeting Refreshments

Those with family names beginning with Q - Z, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

Thursday, April 6, 2017 at 7:00pm
"Pediocactus and Sclerocactus;
A Tour of the Colorado Plateau"

Presented by Rob Skillin

From the Central Coast Cactus and Succulent Society,
San Luis Obispo, CA



President's Message

It's Sale Time.

The Spring plant sales are this month and you shouldn't miss them. These sales bring together wonderful cacti and succulent plants, botanical experts, volunteers and hordes of folks that share the same interests. I make it a point to attend as many as possible, mostly to look, but I buy my

share to support our hobby. It is also the time to visit as many cacti and succulent nurseries as you can and buy something from every one of them. Our hobby depends on all of us supporting these businesses.

The biggest sale is at the Desert Botanical Gardens in Phoenix. There are thousands upon thousands of interesting plants for the garden and greenhouse.

Desert Botanical Gardens-Spring Plant Sale

March 17, 2017 - March 19, 2017

Members Preview:

Friday, March 17 | 7 a.m. - 5 p.m.

Open to General Public:

Saturday, March 18 | 7 a.m. - 5 p.m.

Sunday, March 19 | 7 a.m. - 3 p.m.

Events Plaza Parking Lot

Celebrate the gardening season at the Spring Plant Sale. As temperatures warm up Spring is the perfect time for upgrading your home landscape with new desert plants. Choose from more than 30,000 plants including cactus, succulents, trees, shrubs, groundcover, perennials, herbs/veggies, and other oddities. Garden volunteers and staff horticulturists will answer questions and assist in plant selections. Specimen-sized plants and delivery services available.

A large selection of unique bare root cactus will be available at the sale. Bare root plants are often easier to plant than container plants, as they are lighter and don't require the digging of an extra-large hole.

Garden-related pottery, art and other specialties will be available. Members receive a 10% discount on all purchases when they present their membership card.

No admission charge to enter the Spring Plant Sale.

While you are in the Phoenix area you need to go to the Boyce Thompson Arboretum. They have acquired the Wallace Garden Collection and are integrating it into their garden. There are spectacular scenic view at BTA. If you haven't been there for a while it is certainly work a trip at this time of year.

Boyce Thompson Arboretum-Spring Plant Sale

Daily March 10 - 26, 2017

Our 2017 Spring Plant Sale opens Friday March 10 with our special Members-Only preview day of shopping, and then continues daily through March 26. Wondering if we have specific plants in stock? Call our staff during daily business hours at 520 - 689 - 2723, or Browse our Most recent Plant Sale List

Fall Plant Sale brings a great selection, also a prime time to buy annual membership at BTA, our annual members save 20-percent on plant purchases during this fundraising sale of trees, shrubs, herbs, flowers, cacti and succulents.

We do have a number of member nurseries in the Phoenix area so please check them out. Locally, there are 2 sales in March. We are having a sale of recently rescued cacti on March 19. There will also be a number of our member vendors selling their cacti and succulent plants etc. Vendor sales start at 8:00am and the rescue sale by number starts at 8:30am at our Amphi holding site. This is a great opportunity to support our Society's rescue program. Emails and postcards with all the information will be sent out in the next week. As always we need volunteer help to make this a success.

Tohono Chul Park

ANNUAL SPRING PLANT SALE!

Members' Preview: Wednesday, March 15 | 12 - 6pm

General Public: Saturday, March 18 | 9am - 5pm

Sunday, March 19 | 10am - 4pm

It's time for the annual Spring Plant Sale. Don't miss access to over 1,200 species of cacti, succulents, shrubs, trees, and flowers. Sale takes place in the Propagation Department located near the Education Center at 7211 N. Northern Avenue.

We are so fortunate in Tucson to have so many wonderful growers and nurseries. Please stop in and thank them for their support of our hobby. We all appreciate the support you give to the largest local Cactus and Succulent Society in the World!!

I want to welcome Kris Thompson to the Board of Directors to fill the vacant position (ending 12/31/2017) left by our great friend Tanya Quist. I want to thank Tanya for her contributions to the society, Krutch Garden & Florilegium and making a home for cacti and succulents at the University of Arizona.

Dick Wiedhopf, President



Agave Americana
Common plants grown well
are amazing!

FROM THE FLORILEGIUM

One of the Sonoran Desert's less conspicuous spring wildflowers is the desert chia, *Salvia columbariae*, a small, slender plant with dull green foliage. The plant commonly grows to 12" high with a similar width, but under extremely dry conditions, it may grow to only a few inches. While not a showstopper, desert chia is striking for its whorls of white-tipped blue flowers nestled in a cluster of wine-red bracts and sepals. Strongly aromatic leaves grow at the base of the plant and have deeply set veins that produce a very bumpy, irregular surface. From these basal leaves grows a square stem with 1 to 4 whorls of flowers.

Inside desert chia's tiny blue flowers is a unique pollination mechanism characteristic of the genus *Salvia*. Each stamen has both a fertile and infertile anther separated by a thin connective that balances on the end of the stamen's filament. The fertile anther protrudes from the opening of the flower while the sterile anther extends toward the back of the flower. When an insect enters the flower, its head naturally pushes the lower half of the stamen (infertile) against the wall of the corolla, and the upper half (fertile) bends down to deposit pollen on the back of the insect. The diagram shown here is a longitudinal section of a generic *salvia* flower that shows the fertile anther at the top of the corolla and the infertile anther near the corolla's lower lip (the insect's landing pad) waiting for a pollinator to push them backwards and lower the fertile stamen.

Margaret Pope's portrait of *Salvia columbariae* illustrates the whorled inflorescence and also the texture of the basal leaves. The tiny blue flowers have two stamens with yellow anthers protruding from the flower—the upper portion of the stamen that will eventually dust the backs of visiting pollinators. Margaret's drawing is now part of the Sonoran Desert Florilegium, as are all the wildflower illustrations that she prepared for the Arizona Native Plant Society's "Sonoran Desert Wildflowers" poster.

Salvia columbariae occurs throughout the southwestern U.S., Baja California, and northern Mexico. Desert chia seeds historically have been a staple of native peoples of the southwest who ground the seeds into flour or combined them with water to make a nutritious mucilaginous mixture to be added to food or drink. The seeds of desert chia are not to be confused with commercially grown chia seeds, which are harvested from *Salvia hispanica* (and used to grow Chia Pets).

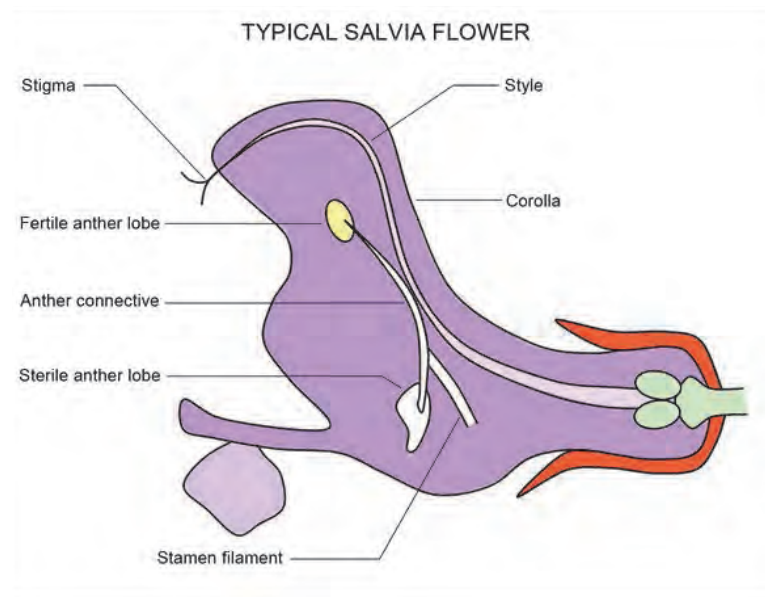
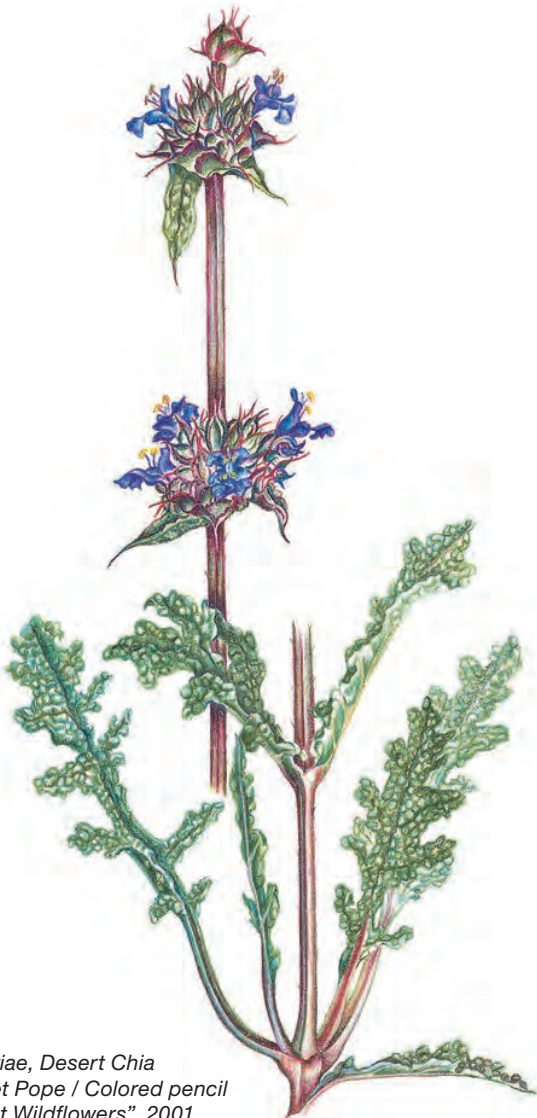


Image courtesy of www.cronodon.com



Salvia columbariae, Desert Chia
© 1999 Margaret Pope / Colored pencil
"Sonoran Desert Wildflowers", 2001

The TCSS 2017 Spring Garden tour

The TCSS 2017 Spring Garden tour will be
Sat., April 22, 9 am -3 pm.

There will be 5 gardens to tour in the Northwest, Oro Valley area. These yards will provide many interesting plants and display ideas. Mark your calendars for a fun experience.

More information, a map and directions will be provided in April. See you then. Bill Salisbury

Ironwood Forest National Monument

You are invited to Meet the Monument

Saturday March 18, 2017
8am-2pm

Photo: BLM

Featuring: Talks on local nature and history ♦ Guided nature hike ♦ Photography, botany, and geology walks ♦ Interpretative exhibits



For more information about Meet the Monument, contact Jim Avramis at jimavramis@gmail.com



Photo: Tom Blanford

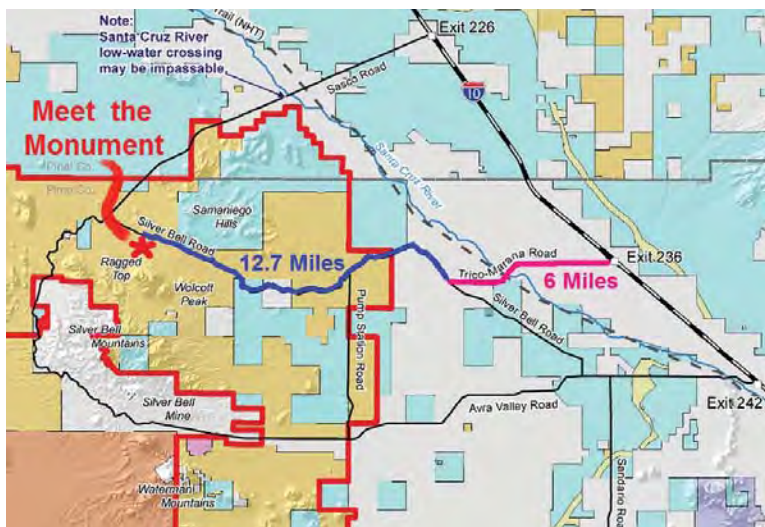
Located at the base of scenic
Ragged Top

Directions: Exit 236, Marana Road off I-10 Head west on Marana Road, which becomes Trico-Marana Road. Turn right on Silverbell Road and proceed for 12.7 miles. The last 5 miles of road are bumpy graded dirt with some dips and washboards. Watch for posted signs.

Bring food and water.

Join us!
Friends of Ironwood Forest
ironwoodforest.org

Sponsors: ASARCO ♦ Bach's Cactus Nursery ♦ Rusty Lizard Press ♦ Summit Hut ♦ Tucson Cactus and Succulent Society



South Coast Cactus & Succulent Society

www.southcoastcss.org

Show included with paid Garden admission: adult \$9, senior/student \$6, age 5-12 \$4, under 5 free. Garden members free.

45th Annual Show and Sale

April 8-9, 2017 9AM to 4 PM

South Coast Botanic Garden, 26300 Crenshaw Blvd.
Palos Verdes Peninsula 90274

Pima County Master Gardener's Annual Home Garden Tour

The Pima County Master Gardeners announce their 18th Annual Home Garden Tour on April 1, 2017 from 9 am to 3 pm. Four gorgeous desert home gardens will be open to the public for the tour. These four west-side Tucson Mountain home gardens offer a wonderful palette of gardening choices. You may stroll contemplative labyrinths at one, inhale breathtaking views at another, buzz among the bees in a wildflower garden at a third, or enter a tropical enclosure of exotic orchids at a fourth.....all while learning important info on topics such as harvesting our precious rainwater or the essential importance of pollinators in our gardens. The Demonstration Gardens at the Cooperative Extension Service will also be open for touring.

Ticket sales begin February 15, 2017 and may be purchased: online @<https://uacals.org/5xp>, at the Cooperative Extension Service 4210 N. Campbell Ave.; and at the following Tucson garden centers: Arbico, Bach's, EcoGro, Harlows, Mesquite Valley Growers, Plants for the Southwest and Rillito. Tickets may also be purchased at each home garden and at the Extension's demonstration gardens on the day of the tour.

Tickets are \$15 in advance or \$20 on-line or the day of the tour.

Extensive plant lists for the gardens will be available on-line and at each garden.

For more information call 626-5161

Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

Publications

Chris & Cliff Mann

Education

Howard Grahn & Family

Research

David Bishop & Charla Dain

Conservation

Mark Dworschak & Nicholle Zarkower
Robert & Vanessa Dearing

Pima Prickly Park

Massimo Boscolo
Nancy Eswein & Angela Guida
David & Mary Liz Freund
Lynn McEvers Andrews & Family

Unrestricted General Fund

Geno Decarlo & Diane Strzesak
Diane & Ardner Cheshire
Susan Harris
Scott Sherman

In Honor of George Dodds

Frank Harris
Ocean View Farms, Inc



PIMA PRICKLY PARK

DID YOU KNOW?

Volunteer Jim Bliss has worked his magic in not With hints of Spring in the air, many of us will be seeing bees going about their buzzzziness in our own back yards. (Sorry...I couldn't resist.) Interestingly, some of our native bees use holes in trees for their nest building. As my great-grandfather, grandfather, father, and several uncles "raised" bees and "housed" them in wooden beehives, this information was quite a surprise. (To my family's delight, my great-grandfather also sold his honey to Fanny Farmer Candies.)

Most members of the family Megachilidae (leafcutters and mason bees) use holes in trees for their nest building. At Pima Prickly Park, the Bee Tree is a designated habitat for such bees. TCSS member Greg Corman designs and builds bee habitats. When you visit the Park, look closely at the Bee Tree. Greg previously drilled holes into the bark to provide potential nesting spots. (More news on bees to come in the next Newsletter.) ---Cari Wright

WHAT'S NEW?

The Hoop House is being re-arranged. The "work station" is being moved to the back area where it is shadier.

Construction of new planting tables for the Hoop House has been approved. Everett Grondin will be building them. (We send a very special "Shout Out" of thanks to you, Everett.)

We have a terrific new volunteer, Kristine Klewin, who comes to the Park all the way from Vail. Fantastic!

Jessie shared a picture of a "new resident": A dove has made herself at home by building her nest atop a saguaro!

From Linda Heisley:

(02/16/2017) "Tom, Kristine, Dick & I did more planting/clearing today near the crested area and along the River Rd. fence. Jim continued rock work on beams & Cathy is getting the Hoop House prepared for the upcoming rearrangement. Next Thursday, if the Park doesn't get a good soaking, the thought is to give the Hesperaloes, spoons & anything else a good soak before the heat arrives.

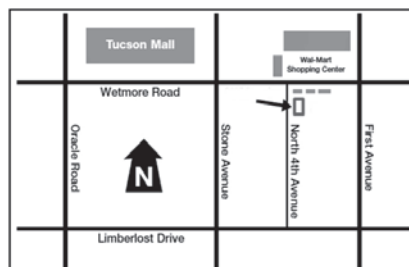


T.C.S.S. RESCUED CACTUS SALE

Sunday- March 19, 2017 • 8:30 a.m. To 10:30 a.m. • Gates open at 8:00 a.m.
4342 N 4th Avenue / Between Wetmore and Limberlost

Come Early For Best Selection!!! • Member-Nursery sales open at 8:00 a.m.

The TCSS Rescue Program saves native plants that are about to be lost to development and reinvests the income from the sale of those plants back into education and conservation programs like K-12 school grants, the Sonoran Conference, research grants, Pima Prickly Park, STEMazing and the TCSS Field Guide.



www.tucsoncactus.org
**CASH, CHECK or CREDIT
CARDS ACCEPTED**

TCSS BOARD

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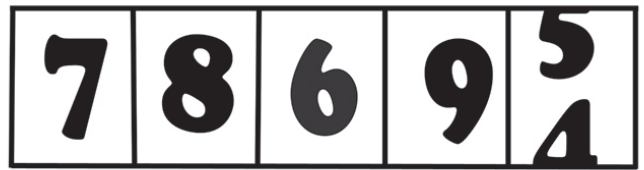
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Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

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March 2017

Thursday, March 2, 2017 7:00pm

"Aloes and Agaves in cultivation"

Presented by Jeff Moore

Tuesday, March 14, 2017 7:00pm

Board meeting, location Ward 6 City Council office at 3202 E First St, Tucson. Enter at the back of the building.

Sunday, March 19, 2017, 8 - 10 am

TCSS Rescued Cactus Sale. Gates open at 7 am, sale is from 8 am to 10 am. Entrance to the sale goes by number (lowest numbers first), so come early and get a low(er) number. 4342 N 4th Avenue, Tucson (between Wetmore and Limberlost).



This map is for location only. It is not to scale.

Sky Islands Public High School • 6000 E. 14th St.



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

April 2017

Thursday, April 6, 2017 at 7:00 pm

Pediocactus and Sclerocactus; A Tour of the Colorado Plateau

Presented by Rob Skillin



Paul Skillin observing the physiological characteristics of *Sclerocactus parviflorus*.

This month's program will feature two little known genera of American cacti: *Pediocactus* and *Sclerocactus*. Presented by the Central Coast Cactus and Succulent Society's Rob Skillin. The program highlights the best of 25 years of field study during which Rob photographed all species of the two groups, as well as the magnificent landscapes of the Southwestern US. He will explain what these plants are, where they are found, the often very specialized environmental conditions

they have adapted to, and why they are so seldom grown in plant collections. Come to this month's meeting and learn about the smallest US cactus, the rarest US cactus, and the most widespread genus you've never heard of.

I have been growing cacti and succulents for nearly 40 years, and have been involved in various local societies for most of that time. The first office I held was Show and Sale Chairman for the Santa Barbara C&SS, during the late 1980's. After moving to California's Central Valley, I became a founding member, and later, President of the Bakersfield C&SS. In 2005, after another move, I was a founder the Central Coast C&SS and became its first President. This society now boasts 300+ enthusiastic members, and held its very successful tenth annual show and sale in May of 2016. I have also been involved with the CSSA as a member of its Board of Directors.

My first interest, which continues today, was cacti of the Chihuahuan desert, especially those unique genera such as *Ariocarpus*, *Aztekium*, and *Strombocactus*, etc. Gradually, I diversified my collection to include Mesembs, Haworthias, and other succulents, particularly caudiciforms. I've spent many years studying the cacti of the US, particularly *Sclerocacti* and *Pediocacti*. I am an avid grower of plants from seed, and now

have a number of seed-grown specimens in my collection dating back to 1982. As an acknowledgment my expertise with these plants, I have been asked to judge numerous shows throughout California, including the CSSA, Intercity, NORCAL, LA, and San Diego shows.



Sclerocactus polyancistrus blond form from the El Paso Mts.

Along with my interest in cacti and succulents, I enjoy photography and travel. These interests have come together in a wonderful way during my botanical explorations of the western US and Mexico, and portions of South America, Africa, Madagascar and the Middle East. I have several programs based on these trips, and I speak regularly to clubs in northern and southern California. Many of my photographs have been published as illustrations for articles and covers of the Journal and Haseltonia, as well as the Timber Press Book of Succulents of the World.

This should be an excellent program that will cover plants many people have never seen in habitat even though they are found growing in the United States. Come and enjoy friends, refreshments, view the educational library, win some plants and get a free plant at the end of the meeting.

April Meeting Refreshments

Those with family names beginning with A - I, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

Thursday, May 4, 2017 at 7:00pm
Program presentation information to come



President's Message

Spring is upon us and it's fantastic. I really believe that this weather brings out the best in us. Everyone is just so helpful and energetic.

The group of us at Pima Prickly Park who dig hole and plant plants continues to grow. We only have 7.4 acres to fill with our favorite cacti and succulents. 10 years from now it will

be amazing and we will be talking about removing plants. I can't wait. We need your help. We have holes but no plants to fill them. We are planting agaves of all kinds between opuntias (preferably larger species) along the fence on River Rd.

We need about 100 rooted 1-2 gallon Agaves (larger species the better) for the River Rd fence. Just drop them off at the Hoop House any time. We also need tree like rooted prickly pear, at least 3-5 pads.

We just applied for funding of an entrance ramada so our fingers are crossed. The ballpark cost is around \$25,000. We are always looking for funding sources since the park is both educational and environmental and supports our mission.

Thank you to all who donate their time and energy to our Rescue and sales programs. These two activities go hand in hand. Volunteers rescue a site that will be cleared for development and three great things happen. One, we save hundreds of plants that would normally be destroyed. Two, the rescue crew is able to buy plants they dig at a special price. Three, they have to dig twice as many plants so that we are stocked for grants and sales.

The sale on Sunday, March 19, 2017 produced these results: Cactus Sales \$5250.35 (Cactus \$4701.55, Slings \$40.00, Gloves \$255.00, Field Guide \$103.80 and Membership \$150.00) amazing. The sale was only for two hours. Also we had 9 of our member vendors who sold other plants before and during the sale. They did well and the attendees were very pleased to get other unusual cacti and succulents. It was a win/win for everyone.

Thanks to all the volunteers who make this happen.

We had another great rescue on March 26, which I could not attend but met up with everyone at Amphi and PPP. There are Ocotillos, Echinocereus nicholli, Saguaro, and barrels that will be offered for sale on Sunday April 8, at the Green Valley Fair. We have a booth there and will be selling plants, books, gloves and memberships. We always need help: cactus@tucsoncactus.org. Check out the flyer in this newsletter.

A special thanks to Donna and Robert Ellis. It is about a 2 hour trip to the rescue site, with a trailer and they didn't leave for home till after 3:00pm and the trailer had to be returned. It probably was a 14 hour day for them in support of TCSS. Lots of thanks are in order.

This was perfect timing that Doug Rowsell and Joe Frannea finished the Saguaro shelter at PPP. Thank you.

Enjoy the spring weather, enjoy the blooms, it just doesn't get any better than this!

Thank you for your support

Dick Wiedhopf, President

"Mission Gardens is having an agave roasting demonstration

"Mission Gardens is having an agave roasting demonstration on April 28th and 29th and is looking for agaves that are just beginning to flower to throw in the pit and eat! These plants will be trimmed to the heart and roasted in an underground fire pit, using the traditional Native American tools and techniques. Does anyone in TCSS have an agave that is just starting to flower that they would like to donate to this event? No particular species required. Please contact Dena at missiongarden.tucson@gmail.com"

Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success.

We extend our sincere thanks for your support.

Florilegium
Sue Voss

Unrestricted General Fund
David Yetman

Green Valley Gardeners
A Service Club Made Up of Gardeners

Spring Garden Tour
Saturday April 8, 2017
9am to 3pm

- Visit 5 different gardens in Green Valley
- Something for everyone—from a large property, xeriscape gardening, container gardening, perfect gardening for a winter visitor, to incorporating art in creative ways throughout the garden
- Tickets are \$12 and will go on sale March 6 online at www.greenvalleygardeners.com
- Tickets may also be purchased after March 6 at the Chamber of Commerce, The Happy Quail, Desert Bloom, The Native Garden and The Turquoise Cowgirl in Green Valley
- Tickets on sale 9am–1pm, April 8, at Desert Meadows Park

Make a day of it and also attend the free Art-in-the-Park Spring Fair—9am to 4pm

DESERT MEADOWS PARK
999 South La Huerta, Green Valley

- Plants will be on sale from several vendors
- Art Booths
- Silent Auction
- Music and Food

Garden A: JIM & MIDGE



The .21 acre lot and home that Midge and her husband relocated to from Houston in December 2010 had previously been a rental for snowbirds. Very little had been done to the yard, which included four saguaros in the back, three in the front and some lantana and barrel cacti. After arriving here, Midge visited the Tucson Botanical Gardens and the Desert Museum, but found what she was looking for when she visited Tohono Chul. She was so impressed with their desert plants that she took the docent class and is an active volunteer there.

Hardscape improvements to the property were designed to

enhance the landscape as well as keep the javelina out. Midge created a small fenced area behind the garage for a cutting garden. Eventually the entire backyard was fenced, including the top of an existing wall. A new curved pathway provides the canvas for a variety of plants on either side, mixing up the various cactus and succulent shapes—spikey, columnar, rounded, etc. Midge's gardening theme is "volunteers and variety." Her volunteer efforts have resulted in a palo verde tree, a desert willow and several palm trees. Most of the cacti in her yard came from TCSS meetings, Tohono Chul, local nurseries, neighbors and friends. Midge has used the abundance of river rock left over from the original landscaping to enhance different areas. She has augmented the river rock with larger native rock. Colorful pots and found items provide additional interest.



Some of the technical details for Midge's landscaping strategy include:

Watering includes a good daily drink for potted plants when it is not raining. Other plants are hand-watered weekly in hot weather and once a month in colder weather, depending on rainfall.

Soil is composed of a mixture of native soil, packaged garden soil and perlite.

Pest Control includes using Bayer 24 Hour Grub Killer granules which she spreads around the agaves after losing two americano medio-picta alba to grubs.

What is Midge's personal gardening secret?

Don't be afraid to let volunteers grow—you never know what you are going to get.



Garden B: MARY

Full of cholla, prickly pear and a few barrels is how Mary Primeau describes the half-acre lot they purchased in 2003. The landscaping was established by the builder after saving a few cacti and adding a few plants that could survive through the summer with no attention from long-distance owners. When Mary became a full-time resident, she took the docent training



class at Tohono Chul and was introduced to native plants. Mary began to tackle her own property by removing all of the original landscaping, and adding more native plants, lots of pots, and pathways. Rusted metal rebar replaced the original fencing. Mary's collection includes monstrose forms and colorfully leafed plants, aloes, agaves, euphorbias, echeveria, graptopetalum, aloe ramassima, sandpaper bush, and yucca endlichians. Two of her favorite things in the yard are an old wheelbarrow planted with cactus and succulents and a life-sized skeleton on a pogo stick.



Some of the technical details for creating and maintaining the landscaping include:

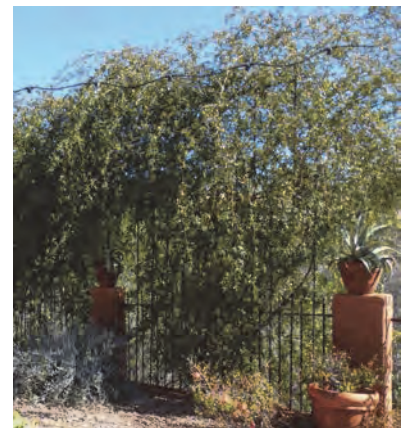
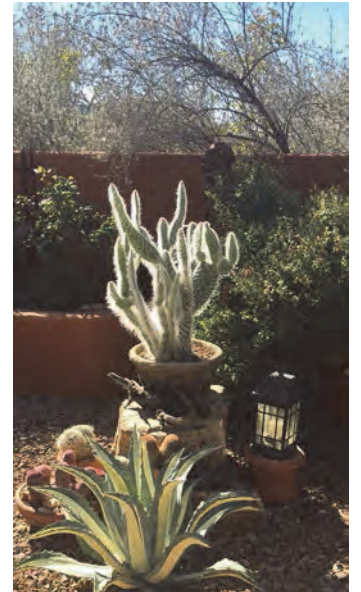
Watering is based on using as little as possible. The yard is divided into grow zones with the most water used near the house. Away from the patio and entrance is an intermediate zone that is watered less. The natural areas are given no additional water.



Fertilizer and soil mix includes using whatever is on hand and inexpensive.

Pest Control is accomplished by removing cactus beetles, spraying mealy bugs and aphids with alcohol, and spraying agaves with a systemic spray. Fences keep javelina and rabbits out of the yard. Outside the fence, she plants non-native plants which the javelina don't enjoy. But Mary does offer a fine javelina dining experience near the wash by planting savory native prickly pear.

What is Mary's personal gardening secret? She "googles" everything. There is so much gardening information on-line.



Garden C: TOM & SUE



Tom and Sue Saari's peaceful garden oasis was featured in the 2016 Master Gardener's Tour and incorporates a wide variety of plants to compliment the beautiful native vegetation on the 3.7 acres of Sonoran desert that surrounds their home. Critter-proof front and rear courtyard walls protect an array of lush plantings. A transitional zone that blends native plants with desert-adapted species is found immediately outside the walls flanking a network of gravel pathways that meander into the surrounding desert. Benches are strategically placed along the paths to take advantage of the magnificent views. The property includes a planting ramada with a composting area, water and art features, as well as vegetables, grapevines and lemon, orange and limequat citrus.

Tom and Sue's garden strives to create a full, mature look with a combination of flowers, shrubs and trees that attract birds, butterflies and local fauna that include bobcats, coyotes, javelina, and mule and whitetail deer. The overall design is a work in progress and as displaced Wisconsinites, they learn as they go. They grow plants by seed or cuttings and provide a touch of whimsy to the overall design with art objects, garage sale treasures, wind chimes and bird feeders.



Some of the technical details for creating and maintaining their oasis include:

Watering is achieved through an irrigation system with five zones for trees, citrus, low and high water plants and pot lines. Irrigation is adjusted seasonally. Small basins serve as water retention areas to provide rainwater to the courtyard gardens. Larger basins outside the walls collect run off. New plantings and others requiring special attention get hand-watered.

Fertilizer includes time-released granules for new plants, occasional all-purpose fertilizer (especially for pots), Miracle Gro is applied to vegetables as needed and the citrus and roses are fertilized on a regular schedule.

Pest Control is accomplished through hand picking insects, removing affected plants to avoid spread, water spray, insecticidal soap, BT and Neem oil. Round-Up is applied to quack grass and the pack rat population is dealt with through Havahart traps.

What's their personal gardening secret? Do your own thing! Visit lots of gardens and learn from others. Be open to making changes and trying something new. Know your invasive species and deal with them early before they take over. And most importantly, take time to step back, share and enjoy what you have created.



Garden D: Don & Julie



Most of the land surrounding Don and Julie's renovated home and garden is left as natural desert, with pocket gardens, hardscape, and metal work featured on about two of their seven acres. Don and Julie discovered the property while on a geocaching hike in the Tortolita Mountains five years ago. The grounds began as several rubble piles and homemade walls among the native plants and a few wonderful thriving non-native plants (including bottle tree, stapelia, some aloes, cereus, golden barrels and a pomegranate tree). In addition to adding plants, property renovations include 40 tons of gravel, removing buffelgrass, weeds and adding hardscape and metal work.



Don and Julie's property features a courtyard garden with irrigated plants for visiting birds and butterflies. Some non-native plants in pots thrive on the patio. Everything planted in the west side succulent garden has gone wild and serves as a propagation garden. The stapelia, aloes, firestix, octopus agave and others love the warm dappled light. The succulent garden is also where the Australian bottle tree lives. There is a collection of agave growing on the rocky west hill and they've started to create a small rocky nature path on the north hill. A

labyrinth is the newest addition to their opuntia garden. Other additions include several native bee habitat/nests to encourage pollinators and milkweed and other pollinator attracting plants. Giant Saguaros and native forest plants populate the natural desert areas of the property.

Some of the technical details for creating and maintaining their garden:

Watering is conservative due to a very slow well. They use drip irrigation primarily in the courtyard and for establishing younger plants. Gutters and two water harvesters provide a supplemental supply for hand-watering shade trees and maintaining a reserve for dry months.


Soil is generally a mix of approximately equal thirds of organic, sand and perlite for cacti and succulents.

Pest Control is accomplished through a homemade organic pesticide/fungicide when needed. Humane traps are used for catch and release of hungry squirrels. Tasty young plants are protected or replaced with plants that are not preferred by hungry animals (euphorbia, aloe, agave, etc.).

What's their personal gardening secret?

Be willing to learn by trial and error when choosing the right plants for each of the microclimates around the property. Agaves and opuntias have been great for the most challenging areas on the west side. Non-natives, aloes and/or specialty succulents live in dappled sunlight and more protected areas. They are actively growing and encouraging shade trees.





PORTA-POTTY



18



LA HUERTA

Art-in-the-park/Spring Fair

April 8th — 9 am to 4 pm

~~A~~ Picnic Areas



Porta-potty

Music



Nursing Station

Silent auction bidding stops at 3:30 in tent #17 in Community Garden

PARKING

PORTA-POTTY

36 TCSS
Rescue
Cactus

ABREGO

GARDEN TOUR TICKETS & CASHIER

Art Booths	1 Ellen Kelly Garden art + purses + tool belts	2 Brenda & Bob Melk Yard art + pottery + woodcrafts	3 Michael Giscombe Note cards + photography
	4 Lois Plante – Pottery Dale Plante -- Woodcrafts	5 QC Gourd Club Gourd art	6 Debra Raeber Clay pots
	7 Nancy Biggins Copper hummingbird feeders	8 Bob Lancaster Pottery	9 GVR Clay Studio Pots + clay garden items
	11 Kay Sobol Glass art objects	12 Earth Angels Clay pots + potted plants	13 Happy Quail yard art Purchase at garden club cashier
	15 Nature by Design Pottery + photography + cards	16 Peggy Terlifner Stained glass	22 Rhella Spiering Fused glass objects
	23 QC Fine Arts Club Paintings	24 GVR Plein Aire Painters Paintings	27 Walden Grove HS Artwork
	32 Casa Vertigo Repurposed wind sculptures	33 Christopher Dezso Whimsical yard art	17 Silent Auction Tent Final bid at 3:30 pm
Gardening	10 GVGardeners Plants + CASHIER	20 EcoGro Landscape and garden products	21 Landscape Cacti Plants
	25 Fairfax Industries Landscape and garden products	26 Tough Plants Plants	28 Arid Adaptations Plants
	29 Nighthawk Natives Nursery Native plants	30 Dryland Plants Adeniums + succulents	31 Blue Sky Plants Plants
	36 TCSS Rescue Cactus Tucson Cactus & Succulent Society		
Extras	14 Friends of Library Book Store Used books + CDs	18 Rio Rico HS FFA Eggs + produce + plants	34 Recycled Treasures Green Valley Gardeners
	35 Garden Tour Tickets GVGardeners' CASHIER	40 TALGV The Animal League of Green Valley	41 Prestige Assisted Living NURSES STATION 
Food	37 Ken's Hardwood BBQ 	38 Wilson's Kettle Corn 	39 Drew's Dogs 
Music	 Jerry Lewis Barrio Garden Lunch time	Donna Rae Daily Hummingbird/Butterfly Garden Lunch time	Ukulele Group Silent Auction Area  Prior to 3:30

FROM THE FLORILEGIUM

Lush, vibrant green masses of leaves, occasionally mottled with reddish purple spots, and brilliant white flowers—a water lover in the desert. *Anemopsis californica* is found throughout the southwestern U.S. and northwest Mexico in the wet soil of marshes and creek banks. As long as it can keep its feet wet, it can withstand our desert's heat.

Thick colonies of plants are formed by stolons sent out from the base of plants, with a new plant growing from each node on the stolon (think strawberries). Flowers grow on stiffly upright stems, 4-8" above the foliage. What appears to be a single flower with white petals is actually a dense cone-shaped cluster of roughly 100 tiny individual flowers surrounded by several large white bracts at the base. Each small flower on the cone, or spike, also has tiny white bracts at its base but lacks a calyx or corolla. A closer look at the spike finds bright yellow anthers above the bracts of each tiny flower. When mature, the spike turns reddish-brown and holds the seeds together in this conical capsule that can be carried away by water, releasing seeds along the way. In late summer into fall, the plant's foliage turns bright red and eventually dies back in the winter.

The common name for *Anemopsis californica* is Yerba mansa, from the Spanish "hierba", meaning herb, and "mansa", mild or tame. One of the most widely utilized medicinal plants of the Southwest, it has been used as a diuretic, disinfectant, and anti-inflammatory. The entire plant is very aromatic, with odors of camphor and eucalyptus.

Anemopsis californica is the only species in the genus *Anemopsis*. It belongs to the *Saururaceae*, or Lizard's-tail

Family, a small family of only four genera and seven species in Asia and North America. It was first described by Thomas Nuttall (1786-1859), an English naturalist who, in 1834, began a two-year excursion gathering plant specimens along the Pacific Coast. In the *Annals of Natural History*, Vol.1 (1838), Nuttall named the plant *Anemia californica*, but as there was already an existing genus of ferns named *Anemia*, the plant was renamed three years later by Sir William Hooker (1785-1865), a botanist at the University of Glasgow. Included in Hooker's flora, *The Botany of Captain Beechey's Voyage* (1841), are 99 botanical illustrations of plants collected during the voyage of the HMS Blossom to the Pacific Ocean from 1825 to 1828. The engraving of *Anemopsis californica* shown here is from Hooker's flora and includes enlargements of (1) a floral bract, (2) a flower with the bract removed, and (3) a flower with the stamens removed to show the pistil.

Lynn Reve's watercolor painting of *Anemopsis californica* is one of the works juried into the Sonoran Desert Florilegium in 2016. Her painting of the Mariposa lily, also part of the Sonoran Desert Florilegium, can be seen in the April 2013 issue of *The Desert Breeze*. Lynn has provided illustrations for the upcoming Legumes of Arizona, and her pen and ink drawing of *Mammillaria tetrancistra* is included in the Intermountain Flora: Vascular Plants of the Intermountain West, U.S.A. She is president and a charter member of the Southwest Society of Botanical Artists and a member of the American Society of Botanical Artists. More information about Lynn can be found on the Florilegium's web site (http://art-botanical.org/SDFlor/Artists/FlorArtists_Reves.html).



Anemopsis californica From
The Botany of Captain Beechey's Voyage
(1841)
By William Jackson Hooker
and George A. Walker-Arnott
Image courtesy Biodiversity Heritage Library
<http://www.biodiversitylibrary.org>



Anemopsis californica, Yerba mansa
© 2013 Lynn Reve / Watercolor

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Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:

Thursday, April 20, 2017

TCSS Web Page:

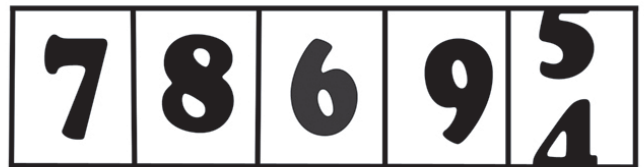
www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

**Bring your friends, join in the fun and meet
the cactus and succulent community.**



Cacti Rescued - Since 1999
370 Rescues - 27,212 Volunteer Hours

Please see our Website Calendar for the next rescued cactus sale. They are scheduled at various times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus Rescue sites. Please email us as much information as you can from new project signs or from other sources to **Site@TucsonCactus.org**. Attach a photo of the sign if you can. Note, we do not remove plants from residences.

April 2017

Thursday, April 6, 2017 7:00pm

"Pediocactus and Sclerocactus;

A Tour of the Colorado Plateau"

Presented by Rob Skillin

Saturday, April 8, 2017 from 9 am - 4 pm

Art-in-the-Park/Spring Fair at Desert Meadows Park,

S La Heurta RD, Green Valley, AZ

Tuesday, April 11, 2017 at 7 pm

Board meeting, location Ward 6 City Council office at

3202 E First St, Tucson

Saturday, April 22, 2017 from 9 am - 3 pm

TCSS 2017 Spring Garden Tour. There will be 5 gardens to tour in the Northwest, Oro Valley area. These yards will provide many interesting plants and display ideas. Mark your calendars for a fun experience.

Friday and Saturday, April 28 and 29, 2017

Mission Gardens agave roasting demonstration



Sky Islands Public High School • 6000 E. 14th St.



PIMA PRICKLY PARK

DID YOU KNOW?

TCSS member Greg Corman designs and builds artistic bee habitats specifically for leafcutter, mason, and resin bees. He has focused on these particular native bees for his habitats because they are not aggressive, almost all are solitary in nature, and they are not bothered by humans. As they do not have a colony to defend, they are relatively "people-friendly".

I had the pleasure of interviewing Greg and learned the following details about these Sonoran Desert bees:

Contrary to honeybees, these native bees do not form colonies. Although some bees do excavate their nests by digging burrows in the ground, the leafcutter, mason, and resin bees prefer to use the abandoned tunnels and holes made in dead wood by wood-boring beetles. The females make a cell in the darkened hole or tunnel by using pollen and nectar rolled into a sticky "ball" and lay a single egg on it. The bees hatch one year later in the warm season usually timed with the blooming of mesquite and palo verde and live for approximately 6 weeks.

Greg designs his habitats to replicate the tunnels by drilling six- inch tunnels in the structures. He recommends placing the habitats where you are able to watch them at close range. They can then become conversational "gateways" for opening discussions about the important role of bees as crucial pollinators for our desert plants and essential contributors to our eco-system. -----Cari Wright

(For more information on Greg's functional art habitats go to greg@cormanart.com)



WHAT'S NEW?

Cathy Robson and a fabulous crew of volunteers have been busy re-organizing the Hoop House. New planting tables have been installed and former planting beds have been removed from the "dark side" of the Hoop House. Functionality at its finest !



From Linda Heisley:

Robert Ellis heard Cathy's pleas for new wheels on Amphi's gate & we are rolling again. Last Thursday Joe & Doug, and a little help from friends, got the shade cloth up on our secondary holding site for rescued plants. Jim is working his way through the rock pile & shoring up a hill & slowing water flow. Linnea set out a cart full of plants in the agave garden & Tom got them all planted. Kristine is making her way around the park & watering our new additions during this hot stretch. Greg cleared off a big patch of weeds in front of the Hoop House which is much appreciated as we are now on snake watch. Great progress on Hoop House layout.

Still to come:

Laying out paths in the ferrocactus garden
Finish planting the plants on "Dick's bench"
Continue watering
General cleanup in the hummingbird garden
Whatever else comes up!
Thanks everyone.



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

May 2017

Thursday, May 4, 2017 at 7:00 pm

Prickly prospects for cacti under climate change

Presented by Michiel Pillet

Recently, the International Union for Conservation of Nature (IUCN) completed an assessment of the conservation status of 1,478 species of cacti. They found that 31% of these species were threatened, a proportion higher than for birds and mammals. The most significant threats were found to be agriculture, development, and collection of plants in the wild. Climate change was noticeably absent from this list, but very few cactus studies have addressed this topic. Does climate change worsen the outlook for cacti?

Using tens of thousands of geographic records, Michiel assessed the potential impacts of climate change for several hundred species, including iconic taxa such as saguaro, *Ariocarpus retusus*, and Arizona queen of the night. Please join him in an exploration of the future of our prickly friends. Along the way, we'll learn about climate change, focus on the stories of some of the 99 species considered to be critically endangered, and discuss how we can all play a role in their conservation.

Michiel grew up in Belgium, and became fascinated by succulents as a teenager. After high school, he moved to Montana for college, unfortunately having to leave his first plant collection behind. He and his wife just moved to Arizona last year. Michiel is a doctoral student at University of Arizona, where he works primarily on computer models with application to conservation. Having been welcomed warmly by several members of TCSS, he quickly rebuilt his succulent collection, with several hundred plants and thousands of seedlings. He is working toward starting a succulent non-profit whose missions are conservation and making rare species more available to the public. Besides succulents, he is also interested in reptiles, insects, amphibians, and carnivorous plants.



Using almost 40,000 records of individual cacti, and information on climate, land use, and seed dispersal, Michiel made predictions of the current and future ranges of hundreds of species. This allowed him to assess changes in range size for some of our favorite species. Such information is helpful for conservation biologists, who need to decide how to spend limited funding. It can also help with discovery of new species and

populations. For example, based on known locations of the rare *Mammillaria luethyi*, are there other areas predicted by the computer models to be suitable but from which this species is not known? Or, where will prime habitat for saguaro be located fifty years from now?



Another way to use the occurrence data is the creation of diversity maps. Why are cacti so diverse in the Brazilian Highlands? Where did cacti originate? Those are some of the questions such maps can drive us to think about.

Please be sure to come to the May 4th program and introduce yourself to Michiel. This should be a very good program that needs our attention. Also enjoy the refreshments, free plants and so much more.

May Meeting Refreshments

Those with family names beginning with J - R, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

Thursday, June 1, 2017 at 7:00pm
Tom Van Devender
TCSS Coastal Trip to Sonora, Mexico



President's Message

This is a busy time to assist all the plants that you protected during the fall and winter to get ready for spring and summer. The weather has not cooperated. The hot, dry and very windy days has made acclimating plants a real chore. If you have a greenhouse structure that is not cooled the inside temperatures are above 110 degrees and not pleasant

for you or your plants. For information purposes only, I found a reasonably priced maximum/minimum thermometer for use around your plants indoors or out. It is made by Durac and available from Amazon. It measures temperature from -30 to 140F.

The Green Valley Garden Fair was excellent. We sold over 100 plants plus gloves, memberships and books for a total of \$2,389.40. Many thanks to all the members who volunteered at the sale. The Green Valley Gardeners were wonderful host and they have developed a great park to support their many interests. You need to visit the park when you're in the area.

We received a wonderful gift of two large Cardons (*Pachycereus pringlei*) each about 8 ft. tall. They have been planted at Pima Prickly Park, south of Saguarohege and are the entrance to a Baja Garden. Many thanks to Larry Ott and his wife for this donation.

I also want to thank the members who responded to our request for Agaves to be planted inside the fence along River Road. We still need about 50 more. When they grow up, and with the prickly pear that we have also planted along the fence, we will have a wonderful look from passersby.

Did you go on the Home Tour on April 22, 2017? If you didn't, you should have. It was a wonderful collection of 4 homes. Each one was special in its own way. Lots of great ideas were to be had. Thank you to the homeowners and to the Home Tour committee for another outstanding job.

The Central Arizona Cactus and Succulent Society invite you to the CSSA's 37th Biennial Convention in beautiful downtown Tempe, Arizona. The convention is from July 26 to July 30, with tours beginning on the 27th, which you won't want to miss! There will be great speakers, plant and pottery vendors, auction and silent auction, local sales areas, and great food at the opening reception, the banquet and breakfast each morning of the convention, as well as the tours. We need to support our members who will be speaking at the convention. They include: Peter Breslin; Mark A. Dimmitt; Jane Evans; Chuck Hanson and Dr. Robert H. Webb. Go to the website, <http://cssaconvention.com/>, for more information. We need to support our friends in The Central Arizona Cactus and Succulent Society.

Thank you for your support

Dick Wiedhopf, President

Volunteer Needed

For those of you who have attended our most recent monthly meetings, you may have noticed that Evelyn Hubbell, after a number of years, has retired from working the Greeting/Membership/Raffle desk. On behalf of all the Board of Directors, we would like to take this opportunity to publically thank her for her years of volunteering with Marty Harow (also thanks to Marty) at that desk. This, of course, means that Marty has to assist all the members and delays result (not because of Marty!).

This position is your opportunity to help out TCSS as well as Marty in filling Evelyn's position at the desk. We would expect the volunteers to feel comfortable greeting members and guests, sell Raffle and distribute Door Prize tickets. You will also be the first point of contact, welcoming members and guests to our meetings. It's a great opportunity to interact with all our TCSS members on a regular basis.

If this job interests you, please let our President or any Board member know!

Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

Unresticed
Edgar Rawl

Patricia H Frannea
Larry A. Ott

Pima Prickly Park
Richard Wiedhopf
Patricia Wiedhopf
Joseph M Frannea

Conservation
Julie Roederer
Scott Roederer



FROM THE FLORILEGIUM

“In the plain itself, the richest and most brilliant wildflowers flourish in boundless profusion, and with a rank luxuriance which far transcends all the efforts of art. All colors, all shades of colors, all hues, all tints, all combinations are there to be seen; and the endless varieties bewilder the senses. Perennial incense ascends to heaven from these fragrant plains; and the size which some of these gorgeous wild-flowers attain, would seem fabulous to an eastern florist.” That impression of the Los Angeles area was recorded by Joseph Warren Revere, a naval lieutenant and grandson of Paul Revere, in *A Tour of Duty* (1849), Revere’s account of his time serving on the USS Cyane during the Mexican-American War.

Even in years without a ‘super bloom’, California’s wildflowers are dazzling. Imagine how spectacular they must have been before the Gold Rush, livestock grazing, invasive exotic species, and urban sprawl. That is how the flowers must have looked to two women who traveled through the state in the 1890s planning what would be the first wildflower guide to California.

First published in 1897, *The Wild Flowers of California: Their Names, Haunts, and Habits* provided field identification entries for a great many of the state’s plants, accompanied by 149 pen-and-ink illustrations. The artist, Margaret Warriner Buck (1857-1929), created highly detailed line drawings of each plant’s habit. All but four of her illustrations were drawn from nature, and those four were based on herbarium specimens. The cost of color printing would have been prohibitive for the project, so the author, Mary Elizabeth Parsons (1859-1947), organized the entries by color into six sections: white, yellow, pink, blue and purple, red, and miscellaneous (greens and browns). While the color of each plant is left to the imagination, the form and various structures of each plant are carefully rendered.

After each entry describing a plant’s identifying structures and habitat, Parsons includes amusing and informative personal observations, notes on ethnobotany and etymology, and even poetry.

About *Zauschneria californica*, she writes:

“In late summer and through the autumn, the brilliant blossoms of the California Fuchsia brighten the somber tones of our dry, open hill-slopes. Its aspect is one of gay insouciance, which would drive away melancholy despite oneself, and though other plants have been put to rout, one by one, by the sun’s fierce glare, nothing daunted, it puts on its brightest hues, like a true apostle of cheerfulness.”

And for the cholla:

“In many places it forms extensive and impassable thickets, which afford an asylum to many delicate and tender plants that retire to it as a last refuge from sheep and cattle.”

During the San Francisco earthquake in 1906, all of the plates that had been prepared for a third printing of the book were destroyed. As all new plates had to be created, Parsons took the opportunity to expand the number of plants included in the guide and to update the nomenclature. A limited number of copies of this 1909 edition were printed on watercolor paper with a deckle edge and gilt top. Half of these deluxe copies had the illustrations printed normally and half had a lighter printing to allow coloring by the reader.

The Wild Flowers of California can be downloaded or viewed online at the Biodiversity Heritage Library (www.biodiversitylibrary.org), at Project Gutenberg (www.gutenberg.org), and at the Internet Archive (<https://archive.org>). All 3 sites include the illustrations and offer a choice of several file formats for download.



CALIFORNIA POPPY—*Eschscholzia californica*.

Eschscholzia californica, California poppy



CALIFORNIA FUCHSIA—*Zauschneria californica*.

Zauschneria californica, California fuchsia

PIMA PRICKLY PARK



DID YOU KNOW?

Look...now you are a hummingbird!

Jessie Byrd pulls an ocotillo branch within reach of one of the second graders exploring Pima Prickly Park so that he can imagine gathering nectar from the blossoms. This is but one of the activities the students enjoy as they participate in a new educational project at Pima Prickly Park.

Pima Prickly Park, in tandem with the Pima County Nursery, is the site for an educational pilot project for students specifically living on the west side of Tucson. It is conducted by Pima County Environmental Education and headed by our own Jessie Byrd. Students from west side schools, their teachers, and Pima Prickly Park volunteers engage in hands-on activities with Jessie and her staff. Students learn the Latin names for the plants and their important roles in a desert habitat.

There has traditionally been a similar program at Aqua Caliente Park on the east side of town. Although a great program, it was too far for west side school buses to transport students there and then return on time for daily school dismissal transportation. This pilot project provides Tucson's west side students with the opportunity to learn about their "prickly"



desert environment up close and personal!

The first group to participate was a "trial run" for the project. It was a success and on April 11th another group of second graders participated. Before the end of April, a group of 70 sixth graders will be the third group to explore Pima Prickly Park.

Cari Wright



WHAT'S HAPPENING in the PARK:

From Cathy Robson:

The team showed up on Thursday as we were welcomed with lots of agaves and aloes. Dick spread the word for plants, and we received a nice donation. Dick and Roger planted agaves along the River Road fence line. There are small ones left over to be potted up before going out into the Park. Kris was there early watering the hesperaloes and any other plants that looked too dry to wait a week. She also was able to trench around the newly planted hesperaloes. Kris just moved from location to location and covered lots of territory. She will document the on the sheet in the black container so Tom knows where she left off. I watered the remaining small palo verde trees and other areas near the HH bench. Kris also watered in the agave garden and the little area between the HH and Jessie's nursery.

Dick, Roger, and Tom planted the donated saguaros, barrels, hedgehogs and cholla from Thomas Staudt. The saguaros and barrels (including the 5-headed one) went near the small ramada. A group arrived and planted the saguaros in the saguaro structure and left to get the two cardons, which were planted on Friday.

I was able to plant some of the items in the HH and watered. Tom completed the irrigation near the large ramada for the bulbine and butterfly plants. It was great to see Linnea. She loaded up the cart and off she went to the agave area, planting and watering. Nice to see her walking better and ready for work. There are two large potted agaves for Linnea the next time she shows up. I'm there to help load and off load.

The park is in bloom. We all wish the cholla would bloom at the same time, but that's the beauty of the desert. A few pictures

are attached. I saw many prickly pear, hedgehogs, penstemon, and native plants in bloom. The trees are looking great also.

For next Thursday we could:

Continue watering the hesperaloes and soltos, and any other areas looking dry. We need to separate 50 of the potted barrels (near the saguaro structure) for our use in the ferocactus area. Also, to set aside 50 of the potted mamms for our use. Dick has plans for the remaining. Once separated, a good watering is in store.

Also, the table in the HH closest to the entrance is ready to plant. Maybe Dick and Roger can dig some holes and come up with good places for those plants. Let's think of the perfect spot for the aloes. They need shade and water. The ones planted without frequent water struggle.

I'm still waiting to connect with the metal works people to get the rest of the tables for the HH. Everett might be on vacation, but I'll keep trying.

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Garden Tours: Bill Salisbury • tours@Tucsoncactus.org

Field Trips/tours Rob Romero/Joie Giunta
trips@Tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, May 25, 2017

TCSS Web Page:

www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

Bring your friends, join in the fun and meet
the cactus and succulent community.



Cacti Rescued - Since 1999
376 Rescues - 28,256 Volunteer Hours

Please see our Website Calendar for the next rescued cactus sale. They are scheduled at various times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus Rescue sites. Please email us as much information as you can from new project signs or from other sources to **Site@TucsonCactus.org**. Attach a photo of the sign if you can. Note, we do not remove plants from residences.

May 2017

Thursday, May 4, 2017 7:00pm

"Prickly prospects for cacti under climate change"
Presented by Michiel Pillet

Tuesday, May 9, 2017 at 7 pm

Board meeting, Ward 6 City Council office at
3202 E First St, Tucson



This map is for location only. It is not to scale.

Sky Islands Public High School • 6000 E. 14th St.



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

June 2017

Thursday, June 1, 2017 at 7:00 pm

Treasures of the Seri Madres – Succulents and Adventure along the Coast of Sonora

Presented by Tom Van Defender and Ana Lilia Reina-Guerrero



This program features the trip to the Gulf of California in Sonora, Mexico during the month of March 2017. There were a total of 13 people on the trip plus the 2 guides, Tom and Ana Lilia. This program will show and highlight the amazing diversity of succulent plants and also describe the many adventures and locations that were visited and experienced.

Thomas R. Van Devender was the Senior Research Scientist at the Arizona-Sonora Desert Museum for 25 years, where he conducted research on a broad range of natural history topics. He has published well over a hundred publications on a range of topics, including natural history, paleoecology, desert grasslands, desert tortoise ecology, local floras, ethnobotany, herpetofaunas and the Madrean Archipelago. Tom is interested in the natural history of many areas in Sonora, especially the Madrean the Sky Island mountain ranges, the la Frontera zone within 100 km of the Arizona border, the Yécora area in the Sierra Madre Occidental, and tropical deciduous forest in the Álamos area. In May 2015, he began as the Director of Biodiversity Programs at GreaterGood.org, where he organized biodiversity inventories to Sonoran Sky Islands in the Madrean Discovery Expeditions (MDE) program and manage the Predator Conservation Program. From 2009 to 2014, he was the Manager of the Madrean Archipelago Biodiversity Assessment (MABA) project at Sky Island Alliance. MABA documented the diversity of animals and plants in the 32 isolated Sky Island ranges and complexes in Sonora, Mexico. These biological records and high-resolution images are available to support conservation activities in the region. Tom organized twelve binational expeditions with large volunteer groups of taxonomic specialists, land managers, college professors and students, local residents, photographers, and journalists to make new observations in high-diversity areas in Sky Island

ranges in Sonora. The MABA (Madrean.org) and the new MDE (Madreandiscovery.org) databases are the best sources of biological records in the Madrean Archipelago.

Ana Lilia Reina-Guerrero received her undergraduate degree from the Universidad de

Sonora in Hermosillo in Agricultural Sciences with a thesis on Medicinal Plants of the Mountain Pima Indians of the Municipio de Yécora, Sonora. She has been involved in ethnobotanical studies with the Seri and Mayo Indians, including the Mayo Ethnobotany book with David Yetman and Tom Van Devender. She is interested in the ethnobotany of Sonoran cacti and was a collaborator on the *Cáctaceas de Sonora* and *My Nana's Remedies* books. Since 1990 she has been involved in floristic surveys in the Arizona-Sonora borderlands in northeastern Sonora border region, and the Yécora area in association with the Arizona-Sonora Desert Museum (ASDM) and Sky Island Alliance. She and Tom Van Devender have made over 20,000 plant collections mostly in the state of Sonora. Since 2009, she has led a US Fish & Wildlife Service (FWS) project to interview rural residents in Central Sonora about the Masked Bobwhite Quail. She has been very active in plant inventories on field trips to Sonora as part of the Madrean Archipelago Biodiversity Assessment project at Sky Island Alliance. She is a professional English-Spanish translator who has translated a broad range of natural history writings for ASDM, US Fish & Wildlife Service, the San Diego Natural History Museum, and other conservation organizations.

If you want to know more about the fantastic 5 day trip into the state of Sonora, please attend this excellent program. You will also enjoy lots of excellent refreshments, win some great plants and go home with a free plant provided by the TCSS.

Thursday, July 6 , 2017 at 7:00pm
Program presentation information to come



President's Message

Milestones are important, especially when the numbers they represent are easy to remember and quote. We have reached 1,000 plus members again this year and we are still growing. This is the seventh straight year with more than 1,000 members. Also this year we have reached 80,000 cacti and succulents rescued since the start of this program in

1999. Wow! What a great effort by all of you.

We had another successful rescue on May 20, 2017. More than 250 plants were saved from this new development. Our holding area is filled with hedgehogs, barrels, saguaros and mamms. We will need to have another sale soon. Watch the website and your mail or emails for more information.

We are almost ready to provide speaker presentations on line. Details will be available very soon.

There is still a need for Agaves to be placed along the west fence of Pima Prickly Park. There has been a lot of work going on at the park. The Ferocactus Garden and Baja Garden are starting to take shape. Come on out and play in the dirt with us on Thursday mornings.

A volunteer is needed to manage the relationships with our growers and nurseries. We need up to date information about contacts, hours of operation, potential discounts to TCSS members, etc., on our website. This position would inform us about news information from our growers and nursery members and more. Tucson is noted for having the best cacti and succulent nurseries and TCSS wants to support them in any way possible.

We are looking forward to the start of the monsoons.

Thank you for your support.

Dick Wiedhopf, President

Member Garden Tour

The April 22 TCSS member garden tour was enjoyed by all those who toured the 4 gardens in Oro Valley. A reception was held on April 23 at Patsy and Joe Frannea's home to reward the four garden owners. President Dick Wiedopf presented participation plaques designed and produced by

committee member Joie Giunta to those shown below: Midge Berlowe, Mary Primeau, Sue Saari and Julie Hallback and Don Featherstone. The committee appreciates the work all the volunteers did to make this tour a success. Stay tuned for details for next year's tour.



FROM THE FLORILEGIUM

One of the Florilegium Program's ongoing efforts is the preservation project for the botanical art held by the Herbarium at the University of Arizona. This has involved cataloging the artworks, preparing archival storage conditions, and scanning the works to create a digital archive. For me, the most interesting part of the process has been discovering the notations recorded on the backs of Lucretia Hamilton's pen and ink drawings.

A recommended practice for botanical artists is to sign and date their works and record the scientific and common names of the plant on the back of the art. For many of her works, Hamilton also recorded information about the plants and the locations where her specimens were collected. For example, on the back of the illustration of *Sapium biloculare* (Mexican jumping bean), she included her signature, the date the illustration was completed, and the plant's names. Additionally, her notes include a description of the plant, including its flowers, and the areas where the plant typically grows. She describes the ethnobotanical uses of the plant and provides the name of the insect larvae that gives the plant its common name of "jumping bean". An additional note indicates that the illustration was prepared from a dried herbarium specimen and not a live plant.

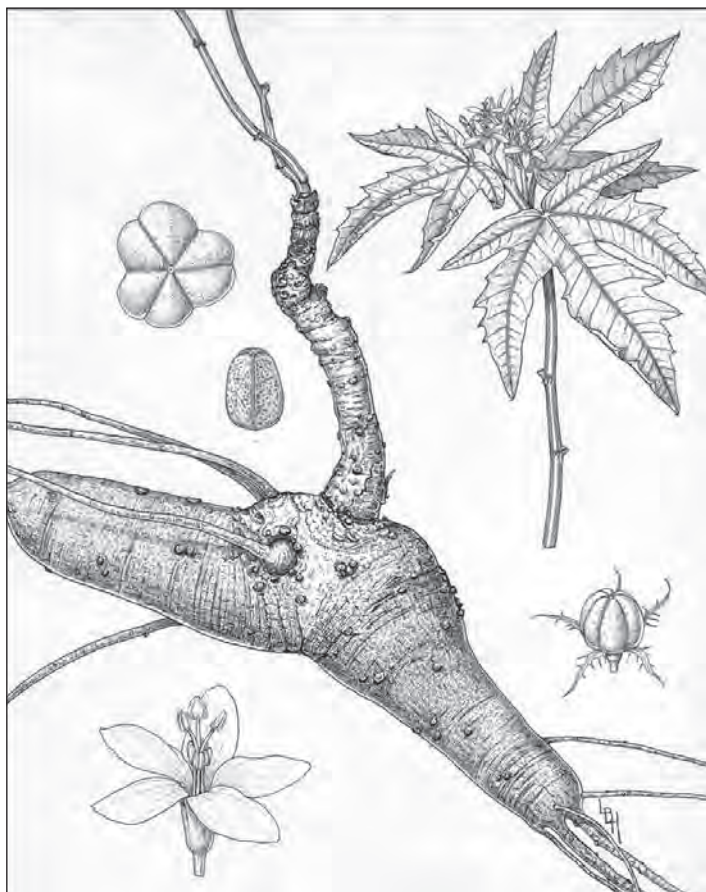
A number of the trees that Hamilton drew were common in Tucson's cultivated landscape of the 1970's. Her drawings of *Eucalyptus rostrata* (Red river gum), *Brahea armata* (Mexican blue palm), and *Juglans major* (Arizona black walnut) were made from specimens collected at Randolph Park. Her drawing of the chinaberry tree (*Melia azedarach*) likely was made from specimens from her own yard, as she notes that two of the trees had volunteered there. *Sambucus Mexicana* (Mexican elderberry) was collected at La Cienega Street near the Rillito River. She

notes that the "graceful, weeping" *Schinus molle* (pepper tree) "has lost its popularity in the city because heart rot kills them and storms break them".

Some of the specimens were taken from friends' gardens, like the wisteria from the garden of Mrs. Bernice Urech, or the orange cosmos and *Pedilanthus macrocarpus* from the garden of her daughter, Mary Frances Zimmer. She notes that her specimens for *Sophora secundiflora* (mescal bean) and *Thevetia peruviana* (yellow oleander) were taken from the University of Arizona campus. The *Sapindus saponaria* var. *drummondii* (soapberry) specimen was taken from Campbell Avenue and 9th Street, and the *Plantago insularis* (Indian wheat) was found at 10th Street and Sawtelle Avenue. The University of Arizona Farm in Mesa provided specimens for the sugar beet and pecan tree drawings. Hamilton's husband collected specimens of *Jatropha macrorhiza* (ragged nettlespurge) near a rest stop on Sahuarita Road.

Many of her drawings were made from specimens collected in the Catalina Mountains, such as *Prunus serotina* (choke cherry) from Bear Wallow, *Rhamnus crocea* var. *ilicifolia* (holly leaf buckthorn) from Molino Basin, and *Arceuthobium vaginatum* (pine mistletoe) from the Loma Linda Picnic Area. *Acer negundo* (box elder) was collected in Oak Creek Canyon in 1979, and she notes that "these inflorescences were mature and gave me hayfever."

The drawing notations also reveal the amount of time she spent completing the drawings. It took only four days in October of 1978 for her to finish the holly leaf buckthorn illustration. Her specimen of *Plantago insularis* was collected on March 10, 1977, and the drawing was completed just two days later.



Jatropha macrorhiza, Ragged nettlespurge
© 1974 Lucretia Breazeale Hamilton



Acer negundo, Box elder
© 1979 Lucretia Breazeale Hamilton



Cactus and Succulent Society of America 37th Biennial Convention

Tempe, Arizona

Celebrating the Beauty of the Desert™

July 26 to 30, 2017



Logo © Steve Plath, 2016 | Photo Credit © Tom Gatz, 2016

Tempe, Arizona, a vibrant urban oasis located in the heart of the Greater Phoenix Metropolitan area, and the Central Arizona Cactus and Succulent Society will play host to the Cactus and Succulent Society of America's 37th Biennial Convention.

The Tempe Mission Palms, our convention hotel, located in the entertainment district of Tempe, is a luxury hotel with pool, exercise room, airport shuttle, valet parking and many other amenities. Our special convention rate is only \$89 per night plus taxes. A light rail stop to other adventures is just out the back door of the hotel.

The Sonoran Desert, a region rich in both habitats and species, will provide the backdrop for informative speakers, plant and pottery vendors, auctions, great food, and opportunities to visit desert plant habitats. The Central Arizona Cactus and Succulent Society is excited to be hosting the 37th Biennial Convention, and is working with the CSSA, to plan a fun, informative, educational and memorable experience. It's time to start planning your visit to Tempe!

World Class Speakers

Graham Charles, England
Joel Lode, Spain
Marlon Machado, Brazil
Peter Breslin, AZ
Mark Dimmitt, AZ
Chuck Hanson, AZ
Woody Minnich, NM
Ernesto Sandoval, CA
Marcia Tatroe, CO
Rob Wallace, IA
Bob Webb, Tucson, AZ
with more to come!

Great Plants, Pottery and More

Arid Lands
Cactus Data Plants
Carol Wichern Pottery
Desert Creations
J & J Cactus and Succulents
Plants of the Southwest
PW Plants – Peter Walkowiak
Rare Succulents – Petra Crist
Sandy Siegel Pottery
Steve Plath
Sticky Situation
with more to come!

Please visit us at the convention website: cssaconvention.com
for the latest information regarding speakers, vendors, daily schedule, and field trips.

PIMA PRICKLY PARK



DID YOU KNOW?

The educational pilot project at Pima Prickly Park is a great success. Jessie Byrd,

her staff, and TCSS volunteers have done an exemplary job in providing “hands on” exploration of the park while teaching the elements of a desert eco-system to students

and adults alike.

Now that the temperature is rising in the Old Pueblo, you and the youngsters in your lives can still connect with Nature when it is too hot to go outside. The following selected activities are from the book “The Essential Guide to a Nature-Rich Life: Vitamin N.” The author is Richard Louv who also wrote “*Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder.*” (In addition, he has written “*Fly-Fishing for Sharks: An American Journey*” which I think just might be an interesting summer read.)

(Note: all listed activities are described in detail in the book.)
“The Indoor Expedition: For when You Can’t Go Outside”

- Start a windowsill garden
- Keep an indoor/outdoor illustrated journal
- Grow a radish inside a balloon
- Raise a praying mantis (you can order the eggs from on-line retailers !!!)
- Make a worm terrarium
- Create a tabletop biosphere

These are but a few of the many activities presented in the book to enjoy indoors.

AND...let’s not overlook making cool and delicious treats from desert plants!

The following selected recipe is from “Cooking the Wild Southwest” by Carolyn Niethammer.

Easy Saguaro Ice Cream

1 and $\frac{3}{4}$ cups slightly softened vanilla ice cream

1 cup fresh or frozen saguaro fruit pulp

2 tablespoons frozen orange juice concentrate

2 tablespoons triple sec (optional)

Combine all ingredients in a large bowl. Beat with an electric

mixer or by hand. Pour into a loaf pan or return to ice cream carton and freeze until firm, about 2 hours.

(My Note: Instructions on making the saguaro syrup are in “Cooking the Wild Southwest.” You can also use the Internet to learn how to make saguaro syrup.)

FROM THE PARK

The *hesperaloes* that were transplanted are showing signs of surviving . Bloom stalks (panicles) are now visible which is a healthy sign of survival.

The *Ferocactus* garden continues to be developed.

Senita cuttings were planted last week. Seventeen arms were generously donated by a TCSS member.

The new shade structure is serving its purpose until the next plant sale.

The “Drought Busters” crew continues to ensure adequate watering in the park.

As always, MANY THANKS to all of you who donate, volunteer, and support the ongoing development of Pima Prickly Park. You are very much appreciated! Cari Wright



Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

Unresticed

Michal Glines & Michael Racy

Special Plants for Pima Prickly Park

Stu & Wendie Bengson

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Site@TucsonCactus.org. Attach a photo of the sign if
you can. Note, we do not remove plants from residences.

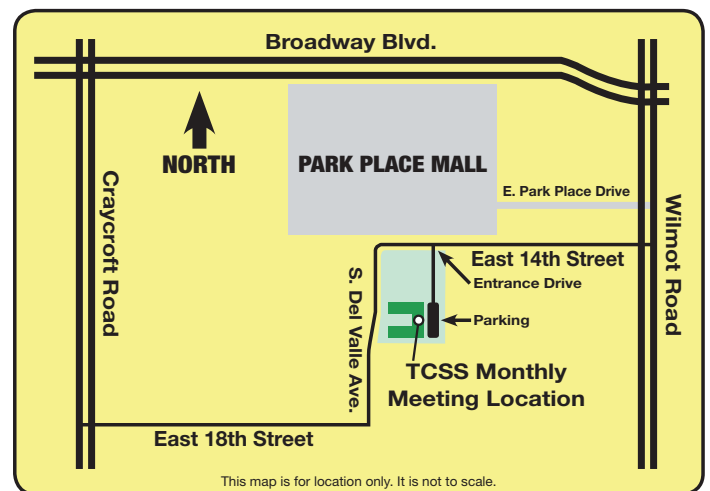
June 2017

Thursday, June 1, 2017 7:00pm

"Treasures of the Seri Madres- Succulents and Adventure
along the Coast of Sonora"

Tuesday, June 13, 2017 at 7 pm

Board meeting, Ward 6 City Council office at
3202 E First St, Tucson



Sky Islands Public High School • 6000 E. 14th St.

June Meeting Refreshments

Those with family names beginning with
S - Z, please bring your choice of refreshments to the
meeting. Your generous sharing will
be greatly appreciated and enjoyed!



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

July 2017

Thursday, July 6, 2017 at 7:00 pm

Agave Distribution from Coast to Coast and Deserts to Mountains

Presented by Greg Starr



Agave montana on Cerro Pena Nevada in southern Tamaulipas



Agave azurea in the Picachos de Santa Clara in the Vizcaino Desert



Agave sebastiana on Isla de Cedros in Baja California.

Have you ever wondered where the epicenter of agave distribution is or where the greatest diversity of species occurs? Are there more species in the tropics, deserts, coasts or mountains? Greg has wondered the same thing and decided it was about time to dive into the subject matter and find some answers. He found some answers and wants to share the results with you. Come out on a hot July night and be prepared to be blown away by what he has found out. Okay, maybe mildly shocked is more likely. Agaves are wholly New World plants, being found in the southern U.S. throughout Mexico, Central America, northern South America, and even the Caribbean. They grow along the coasts of Mexico; in hot, hyper-arid desert regions; moist, steamy subtropics; semi-arid grasslands; and cool, high mountains. They grow in sandy soils, rich volcanic soils, limestone rocks, granitic rocks, gentle slopes, and steep, vertical cliffs. Greg will show examples from the major centers of diversity as well as from all the varied and diverse habitats in which agaves can be found. If you have even a mild interest in plant distribution, or if you just want a 45 minute nap, join your friends and colleagues for an evening of agaves, snacks and conversation. The presentation will not only focus on agave distribution, but will also include some of the best species for landscape use in the desert southwest. Greg has spent many years traveling throughout the desert southwest, and much of Mexico studying and photographing agaves along with other interesting desert adapted plants, and he will most likely show the cream of the crop in this brand spanking new presentation for which the members of TCSS are the lucky recipients.

Greg Starr was born and raised in the Sonoran Desert although he did not become a true plant-o-phile until his college days. His fascination with desert plants for landscaping led to his first book, *Cool Plants for Hot Gardens*, which went viral and is now out of print. His second book, *Agaves: Living Sculptures for Landscapes and Containers*, is a direct result of his long standing interest in those amazing plants. He recently co-authored the *Field Guide to Cacti and Other Succulents of Arizona*, funded by the Tucson Cactus and Succulent Society and private donors. He travels throughout Mexico with many recent trips to Baja California researching a proposed book on the Agaves of Baja California. Greg is an advocate of mixing flowering plants with cacti and other succulents and promotes this idea whenever possible. Greg has presented talks on agaves, cacti and other succulents, and desert plants in general throughout the United States and will be going worldwide at Australia's Succulenticon 2018.

Please join us only a few days after July 4th for an excellent program that should be a great summer treat. There will be some wonderful plants to win as well as lots of snacks and treats assembled by all our refreshment volunteers, for everyone to enjoy. The TCSS will also give everyone a free plant when leaving for the night. Come and enjoy our July program presentation!

Thursday, August 3, 2017 at 7:00pm
Shoestring Travels: Botanical Discoveries in Chile
Presented by Jan Emming



President's Message

Happy July 4th, 2017

Last year we were celebrating an historic rain event for July 1. We really need a repeat. Our plants are really getting stressed and so are we. Everyone needs to work smart on these very hot and dry days.

We had a wonderful rescue sale on Sunday, June 25 and I want to thank

all the volunteer for their special dedication to what we do. The sale was from 8am to 10am but by 9am it was essentially done and the sale grossed over \$4,000 and 11 new members. Not bad for an hour of work. Two of our member vendors sold plants under the Mesquite trees and I want thank them for their support.

Our next sale, mid-August, will be our Blooming Barrel Sale to coincide with *Ferocactus wislizenii* blooming. This is always fun to pick out the color blossoms for your garden.

They range from yellow to orange to red and every shade in between. There will be a couple of rescues (we hope) prior to the sale. If you want to participate in rescues you can send an email to us (Cactus@TucsonCactus.org) requesting your email be placed on our Cactus Rescue Crew list.

The Good Time Silent Auction will be coming up in September. We have several silent auctions on a Sunday afternoon, Ice Cream and all the trimmings, free stuff (plants, pots, gardening related items that you want to give away) making this a don't miss event. There will be more information about this event in the August and September Desert Breeze. Start getting special plants ready to donate for the silent auction.

Don't forget the CSSA Convention in Tempe on July 26-30, 2017. Check it out on the web.

We will be working on Sonoran XII for April 2018 and we always need your help.

Thank you for your support.

Dick Wiedhopf, President

PIMA PRICKLY PARK



DID YOU KNOW?

Did you know that saguaros can become sunburned! Amazing to learn that our beloved saguaros....strong, majestic symbols of the desert southwest...can also be quite "tender."

Although well-established plants are tough survivors of the desert environment, newly re-located/transplanted saguaros benefit from protection. Shade cloth or netting can provide a needed "sunblock" for those that are not yet firmly established....especially for those we may have purchased from a nursery where they were inside or sheltered. This preventative measure can apply to other cacti as well.

With the nuclear heat we are experiencing, it is especially important for us to be alert for heat stress on all of our cacti and succulents. Unfortunately, we may inadvertently overwater our saguaros, which can result in rot. I understand that saguaros will contract their pleats if they need a drink. If the pleats are "open" and "full" one must resist the urge to give them lots more water. Overwatering can also lead to "cracks" in the cactus.

Note: The longer that I live in the desert, the more I learn that "appearances can be deceiving".....TLC is for even our most "prickly" of plants! ---- Cari Wright

WHAT'S NEW ?

A heartfelt thanks to Wendy and Stu Bengson for their ongoing, generous donations of interesting plants to Pima Prickly Park.

The most recent acquisition occurred on May 27th when Bill Thornton, Dick Wiedhopf, Roger Salzgeber, Tom Ganer, and Linda Heisley met at Wendy and Stu's place and removed a large Fence Post cactus. They moved it to Prickly Park, just north of the big ramada at the Hummingbird Garden.

Earlier this month Bill moved two beautiful barrel cactus that will soon have a new location at the park.

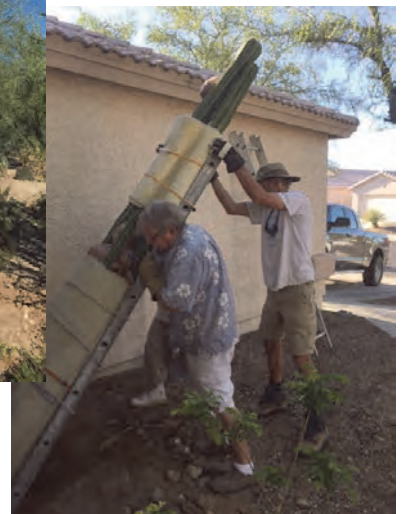
Six large agaves have found themselves a new home in the park thanks to a TCSS member's generous donation.

Another TCSS member has donated rocks----with more to come. They will be used in the ongoing landscape design in the ferocactus area.

We greatly appreciate each of you !!!!

A special SHOUT OUT of GRATITUDE to the "Drought Busters" crew...volunteers who are bravely watering in the park and working in the Hoop House!

Note: As we are protecting our beloved cacti and succulents during this heinous heat, we must be vigilant in protecting ourselves while outdoors. For those of you newly transplanted to Tucson, be especially mindful!



FROM THE FLORILEGIUM

Plant collecting in the 19th century was a treacherous occupation, one that required considerable physical stamina, but one that was not particularly lucrative. So what motivated these intrepid collectors? Scientific recognition? The thrill of exploration? Wanderlust? Obsession? Edward Palmer is considered the most prolific collector of his day, with a collection of more than 100,000 plant specimens residing in herbaria and institutions throughout the world. Judging from the extent of his never-ending travels throughout the western U.S. and Mexico, his perseverance in spite of recurring illnesses and injuries, as well as the sheer volume of his collections, he was likely motivated by all of those things.

Edward Palmer (1831–1911) was born in Norfolk, England. His father's profession as a horticulturist and florist undoubtedly influenced his son's eventual choice of occupation. At the age of 18, Palmer emigrated to the U.S. and settled in Cleveland, Ohio, where he became a protégé of Dr. Jared Kirtland, a noted physician and naturalist. Here he was exposed to Kirtland's herbarium and learned how to prepare both botanical and zoological specimens.

In 1853, upon Kirtland's recommendation, Palmer was appointed to serve as naturalist and hospital steward aboard the USS *Water Witch* with the La Plata Expedition to Paraguay, one of the first expeditions to collect specimens from this region of South America. By 1855, Palmer had made extensive collections in spite of having contracted malaria. In January of 1855, the ship was fired on by Paraguayan forces (an action that caused the U.S. in 1858 to send a large military expedition to Paraguay to demand recompense and apology for the earlier incident). Soon after the attack on the ship, an ailing Palmer requested permission to leave the expedition. He returned to Cleveland, his specimens in tow, and then traveled to England where he married.

Upon his return to the U.S., he obtained additional medical training in Cleveland and settled briefly in Kansas to practice medicine. While Palmer's biographers note that the fate of the new Mrs. Palmer is unknown, legal registers in Kansas record that the Palmers were divorced in 1860. From this point onward, Palmer traveled unimpeded by domestic responsibility.

After spending time collecting in Colorado and California, Palmer applied for a medical position with the Union Army in 1861. With the expectation of an eventual appointment, he traveled back to Colorado but had to serve initially without pay. He found time for some collecting, but as the conflict intensified, his time was dedicated solely to caring for soldiers. A formal appointment finally materialized in 1864 along with two years' back pay. Near the end of the war, his health began to fail, and he was discharged from the Army. He was hospitalized in Kansas City, and, after his recovery, he worked as a contract surgeon in the area.

In 1865, enticed by the collecting prospects in the new western territories—and perhaps tiring of medical practice—Palmer began making plans to travel to Arizona. His experiences there and his developing interest in archaeology and ethnobotany will be explored in the August Desert Breeze.

One of the new plant species collected by Palmer was *Abutilon*

palmeri (Indian mallow). It was first described by Asa Gray in 1870 from a specimen collected by Palmer in 1869 on the Yaqui River in Sonora, Mexico. This Sonoran Desert native can be found on rocky slopes from southern California into Arizona, Baja California, and northwestern Mexico.

Indian mallow has become a popular plant for desert gardens. While the plant's intense yellow-orange flowers are striking, the most memorable feature of the plant is its light green, velvety heart-shaped leaf that just begs to be touched. Despite those soft leaves, this is a tough plant that thrives in the desert heat with little water. The plant's stems and fruit, as well as its leaves, are all covered with tiny hairs, an adaptation for reflecting sunlight and reducing water loss.

This illustration of *Abutilon palmeri* is by botanical artist Cherie Ann Gossett. As a freelance botanical artist, Cherie paints detailed portraits of plants, usually working in watercolor or graphite and colored pencil. Cherie's love for plants began with floral design, leading to gardening, then horticulture, and finally botanical art. Her professional design background includes architecture, landscape design, and city and campus planning.

As a landscape designer, she is particularly fond of portraying plant subjects that can be planted successfully in ornamental landscapes, with an emphasis on plants native to western North America. As a horticulture enthusiast, her paintings often convey the plant from bud to flower to fruit, with as great accuracy as possible. And as a gardening teacher, she hopes to share her appreciation of plants through her paintings.

More of Cherie's work can be seen in the members' gallery on the American Society of Botanical Artists website (<http://asba-art.org/member-gallery/cherie-ann-gossett>).



Abutilon palmeri, Indian mallow
Colored pencil and graphite
© 2009 Cherie Ann Gossett.
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TCSS BOARD

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trips@Tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, July 27, 2017

TCSS Web Page:

www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

Bring your friends, join in the fun and meet
the cactus and succulent community.



Cacti Rescued - Since 1999
376 Rescues - 28,256 Volunteer Hours

Please see our Website Calendar for the next
rescued cactus sale. They are scheduled at various
times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus
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July 2017

Thursday, July 6, 2017 7:00pm

"Agave Distribution from Coast to Coast and Deserts to
Mountains" Presented by Greg Starr

BOARD MEETING TIME CHANGE

Tuesday, July 11, 2017 at 7:30 pm

Board meeting, Ward 6 City Council office at
3202 E First St, Tucson



Sky Islands Public High School • 6000 E. 14th St.

July Meeting Refreshments

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Desert Breeze

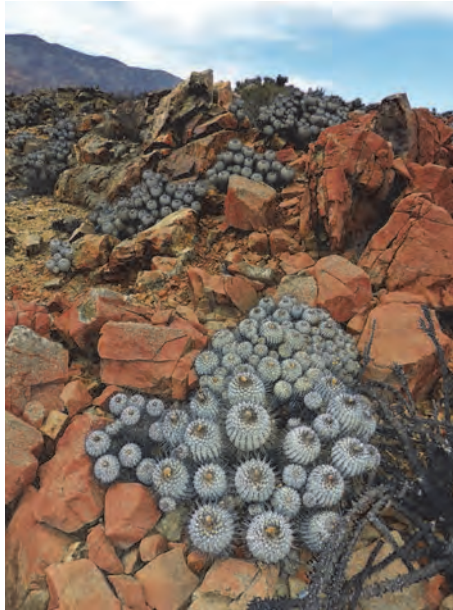
Newsletter of the Tucson Cactus and Succulent Society

August 2017

Thursday, August 3 2017 at 7:00 pm

Shoestring Travels: Botanical Discoveries in Chile

Presented by Jan Emming



Copiapoa dealbata at Llanos de Challe National Park in the Atacama Desert

Chile is the world's longest, narrowest country. Located on the west coast of South America, Chile spans climates from sub-Antarctic glaciers and temperate rainforests in the far south to the driest region on earth, the Atacama Desert, in the far north. The physical isolation of the ecosystems of Chile from both the rest of South America and the world by the Pacific Ocean and the Andes Mountains has led numerous unique species to evolve over time. Along almost all of its 2800 mile length,

fascinating succulents and many other types of plants can be found. Join us for this presentation exploring some of the wonders to be seen in this beautiful and diverse nation.

Jan Emming has been a member of the Tucson Cactus and Succulent Society for 17 years, joining shortly after he moved to Arizona in 1999. That was the year he purchased a large,

off-grid 40 acre parcel of land in the scenic and biologically diverse Hualapai Mountains south of Kingman, Arizona, where the Sonoran Desert merges with the Mojave Desert. This ecological conjunction brings together both saguaro cacti and Joshua trees, alongside a whole range of other species. Since then he's been working on accumulating a large horticultural collection of plants grown outdoors in the ground, mainly succulents but also other xerically-adapted trees, shrubs, and bulbs. Desert Sense Nursery at Destination:Forever Ranch and Gardens offers tours and plant sales by appointment. Jan assures people that the detour off of the main roads is worthwhile if they happen to be in the area!"

Great monsoon weather welcomes our friend Jan Emming back to Tucson. Be sure to see this journey by Jan into the plant habitats of Chile. Take home an excellent raffle plant, join in on the most interesting conversations, enjoy lots of great refreshments and get your free plant offered to everyone by the club.



Volcan Villarica of south-central Chile, with its glowing lava lake reflecting off of vapors and smoke emanating from the summit crater in this nighttime exposure.



Sky Islands Public High School • 6000 E. 14th St.

Thursday, September 7, 2017 at 7:00pm
The New Rare and Seldom seen Cacti
and Succulents of Mexico
Presented by Wendell S. Minnich



President's Message

I am leaving for the Cactus and Succulent Society of America Convention in Tempe on Thursday, July 27, which makes it impossible to tell you about the convention in this message. A number of our members will be speaking and the Convention is hosted by our friends at the Central Arizona Cactus and Succulent Society. I felt it was appropriate that

we are represented and support both of these groups.

I hope you like the progress on making the speaker presentations at our monthly meetings available to members not in attendance or just to see the presentation again. Many thanks go to Peter Ertman and Doug Rowsell for making this a reality.

What a summer! The June heat was devastating to many of our plants, but the July rains have been spectacular and most of our plants now look fantastic. Tucson is covered with a green carpet. What a desert!

Exciting activities are coming up and we need your support and participation.

Blooming Barrel Sale

August 20, 2017 at the Amphi Center on 4th Ave. the same location as all of our sales. 8:00am to 10:00am.

Gates open at 7:00am. Other Vendor sales start at 7:30am

Native barrels are in bloom so you can pick your color from yellow to red. Other native plants will be available.

Good Times Silent Auction

September 10, 2017 at Sky Islands Public High School, 6000 E. 14th St. Set-up 1-3pm, auction starts at 3pm. Information will be sent out in early September. There are always at least 3 silent auctions.

After the 1st has ended the free area of plants, pottery and misc. will be open. There will be \$2, \$5, and \$10 tables to purchase plants etc. starting at 3pm Ice Cream and all the topping will be available free starting at 3pm.

Holiday Party

December 10, 2017 at Sky Islands Public High School, 6000 E. 14th St. Information etc. will be sent out after the November Meeting with Election Ballot and renewal notices.

Take a walk thru Pima Prickly Park. The first 5 years has really made a difference to this property and the next 5 will be even better. We will be plant the Ferocactus garden this fall and working on the Baja garden. Come out and play in the dirt with us.

Thank you for your support.

Dick Wiedhopf, President

PIMA PRICKLY PARK



DID YOU KNOW?

Long before canteens were invented, Native Americans used "saguaro boots" to store or carry water!

With the deluge of rain during our monsoons, many of us are collecting and storing the rainwater to use for our plants and gardens.

But how much rain is too much rain for our succulents/cacti? As the plants' roots are close to the soil's surface, how do we prevent root rot from excessive rain?

Jessie Byrd shared that *there can be too much of a good thing and overwatering is the number one killer of cactus. Most Sonoran Desert species can stand the inundation that comes with monsoons, but drainage is critical. It's important to not plant cactus where water will stand around the root zone....Same for the cactus and succulents in containers at the nursery or home. Make sure they are draining properly.*

Another benefit to the free monsoon rain is the chance to give the irrigation system a break. When we've had sufficient rainfall, it's important to remember to adjust your irrigation clock so that plants don't get overwatered.

For those of you who are just beginning to learn about the care and cultivation of succulents/cacti, **Debra Lee Baldwin** has as a dynamic website where she addresses all things "succulent". Debra is known as the "queen of succulents". Her section on

"Post-Rain Must Do's for Succulent Gardens" offers guidelines and preventive measures for overwatering. (debraleebaldwin.com) ... Note: her suggestions are far more practical than the umbrella I used during one fierce downpour!

----Cari Wright

WHAT'S NEW?

Regular intervals of over a quarter inch of rainfall have been received in Pima Prickly Park and the Nursery. Joe Frannea has the official data.

Acknowledgement of Contributions

The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

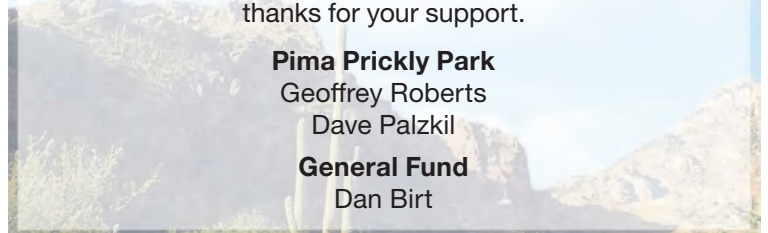
Pima Prickly Park

Geoffrey Roberts

Dave Palzkil

General Fund

Dan Birt



FROM THE FLORILEGIUM

The early life of Edward Palmer (1831–1911), from his first collecting expedition in Paraguay to his time with the Union Army, was described in the June *Desert Breeze*. Following the end of the Civil War, he traveled west to Arizona as a civilian interested only in collecting. In July of 1865, the 34-year-old Palmer arrived at Fort Whipple, the seat of government for the Arizona Territory. During his brief time there, he, along with the Fort's surgeon and naturalist, Dr. Elliot Coues, collected some 600 plant specimens.

Although the war had ended, the Army maintained a presence throughout the West to protect new settlements, mines, and commercial ventures from raids by the various native tribes. In October, Palmer re-entered the Army as assistant surgeon at Camp Lincoln, an outpost staffed by volunteers from Fort Whipple for protecting settlers in the Verde River area. Life at the Camp was difficult and dangerous, but Palmer nonetheless managed to amass a large collection of plants and other specimens. In venturing out from the post, Palmer encountered what was likely Montezuma's Castle. He was the first to describe the site, its geology, and construction, and he found evidence of cultivated corn and grapevines, and textiles made from local plants.

During a routine supply trip in the spring of 1866, Palmer was thrown from a mule and sustained a severe head injury that kept him from his duties for several weeks. To complicate matters, he suffered another attack of malaria that he had contracted in South America. He was transferred to Fort Whipple—but without his collection of specimens. Camp Lincoln's commanding officer promised to forward them to Palmer, but they were never sent. This is particularly unfortunate in the case of the maps and drawings that he had made of the cliff dwellings and the numerous artifacts that he had collected. In 1869, he returned to Camp Lincoln to locate his collection, only to find that they had been stolen or thrown away. Palmer wrote, "It is vexatious to lose things after they have been obtained at such great sacrifices and privations; and once lost may not be gotten again, especially the articles from the ruined buildings in rocky ledges."

Upon release from Fort Whipple's hospital, he was posted to Camp Grant, located at the confluence of the San Pedro River and Aravaipa Creek. On the way to the Camp, Palmer was pronounced "a very sick man" by a doctor in Tucson, but despite his continuing ill health, he managed during the spring and summer of 1867 to collect some 200 plant specimens and a large number of birds and mammals. In consideration of his ongoing illness, he requested release from his Army contract, which was granted in March. He remained in the Tucson area until the end of August during which time he continued his plant and ethnological collecting.

Palmer then traveled to California where he hoped to find a cure in Sonoma for his health problems. The result of that venture isn't recorded, but he apparently recovered sufficiently to travel back to Washington by boat to seek a new venture, one that turned out to be a particularly troubled year in Indian Territory as a doctor for the Kiowa-Comanche Agency in the Eureka Valley. After that unfortunate year, Palmer became a full-time collector, no longer having to juggle medical duties with his collecting. His many travels from that time to the end of his life

will be explored in the October *Desert Breeze*.

In 1869, employed by the Smithsonian Institution and the U.S. Department of Agriculture, Palmer traveled back to Arizona. Here he collected specimens of an agave that George Engelmann would name *Agave palmeri* (*Transactions of the Academy of Science of St. Louis*, 1875). Engelmann's description was based on specimens collected by Arthur Schott (1855), Palmer (1869), and Dr. Joseph Rothrock (1874).

Margaret Pope's unique and beautiful illustration of the flowers of Palmer's agave shows the progression of the flowers as they develop. These flowers, which produce a significant amount of nectar at night, are primarily pollinated by bats. Plants bloom first at the southernmost parts of its range, and migrating bats from Mexico follow the northward-moving blooming of the agaves along their migration route.

A note about the illustration of *Abutilon palmeri* that appeared in the July *Desert Breeze*: The delicate green color of the plant's distinctive fuzzy leaves was not represented well. Please visit the Florilegium's website to see a more accurate version of Cherie Ann Gossett's drawing. There is a link to the article and Cheri's drawing on our home page (www.sonorandesertflorilegium.org).



Agave palmeri
flowers
© 2006
Margaret Pope

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Thursday, August 3, 2017 7:00pm

"Shoestring Travels: Botanical Discoveries in Chile"
Presented by Jan Emming

Tuesday, August 8, 2017 at 7:00 pm

Board meeting, Ward 6 City Council office at
3202 E First St. Tucson, AZ

Sunday, August 20, 2017 from 8:00am - 10:00 am

TCSS Blooming Barrel Sale.
4342 N. 4th Ave. Tucson, AZ

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Desert Breeze

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September 2017

Thursday, September 7 2017 at 7:00 pm

The New, Rare and Seldom Seen Cacti and Succulents of Mexico

Presented by Wendell S. (Woody) Minnich



Woody Minnich



Agave albopliosa



Aztekium valdezii

Mexico is considered by many to be one of the richest regions in the world for cacti. From the United States to the north, to its southern border of Guatemala, there are an amazing number of genera and species to be found. These range from the tiny *Turbinicarpus* to the giant *Pachycereus*. Within the reaches of Mexico, there are many diverse geologic environments. These habitats vary from the coastal and inland low lands to its many high mountain niches. For almost 50 years, I have been lucky enough to have traveled most all of Mexico. Thus, my favorite regions for exploring include the most popular Baja California, to the mysterious Sierra Madre Occidental, and the succulent rich Sierra Madre Oriental. It is from these famous territories that the majority of the highly desired collector's taxa are to be found.

One might think that Mexico, being so close to the United States, would have been totally explored and there would be

nothing new to find. Nothing could be further from truth! We are now finding new species of cacti and other succulents at an astonishing rate. These new finds have become a reality mainly because of the construction of many new roads leading us into what was previously unexplored territory. Coahuila, Durango and Zacatecas embody many of these remote regions where few explorers have had the opportunity to botanize. And now, these areas are rapidly opening up!

The ever-popular genera of: *Agave*, *Dasylerion*, *Fouquieria*, *Ariocarpus*, *Astrophytum*, *Aztekium*, *Echeveria*, *Gymnocactus*, *Mammillaria*, *Pelecephora* and *Turbinicarpus*, are just a few of the genera where the addition of new species has become common. Due to all of the excitement and interest in these new plants, there have been numerous negative side effects that have evolved. This increased interest in these new plants, combined with the commercial powers of the internet/google, has created new distribution avenues for the marketing of the rare and or endangered species. Plants I have seen for many, many years are now facing new threats from commercial collecting. CITIES and the enforcement of local and international laws, regarding illegally collected plants, has had very little impact on curtailing the destruction of specific plant populations. This is especially true when plants are new or highly desired because of their scarcity in the collector's circuit.

Come join me, as I will show you many of the new cacti and other succulents of Mexico. Also, I hope to share with you what is happening to these wonderful plants, partly as a result of our new electronic world and the power of money!



Sky Islands Public High School • 6000 E. 14th St.

Continued on page 2

Continued from front page

Woody, as he is commonly known, has been in the cactus hobby for some 47 years and has become well known for his participation and contributions. He has been awarded honorary life membership to ten clubs, as well as, a life member and Friend award with the CSSA (Cactus & Succulent Society of America.) His many leadership roles include: National Show Chairman, Convention Sales Chairman, Convention Speaker coordinator, 2016 Mid-States Conference Co-chair, accredited C & S judge and writer -photographer. He has also served in almost all positions of leadership for many regional clubs and is currently the president of the new Santa Fe C & S club.

Woody is probably best recognized for his many presentations. His photography is considered to be special and his commentary very entertaining and educational. After all, he was a celebrated secondary school teacher for 32 years, where he taught Art, Graphic Arts-Design and Architecture. He has now become a recognized international speaker and has presented at cactus and succulent events all over the world.

He has also authored a number of articles for various newsletters and journals including the CSSA journal and his photographs are also well published. His work is featured in many books including: "The New Cactus Lexicon" Hunt and Charles, "Mammillaria" Pilbeam, and "Echeveria Cultivars" Schulz & Kapitany. Woody is the creator-originator of the first color version of the CSSA journal article "Cacti and Succulents for the Amateur" featuring show plants, shows, and the growers of the pictured plants. He is also often called upon to do new book reviews for the CSSA journal

His involvement in the cactus and succulent world is well represented by his 45 years of field work in regions including: Africa, Argentina, Australia, Bolivia, Brazil, Chile, Madagascar, Mexico, Namibia, New Zealand, Peru, Socotra, the United States and Yemen. He often goes to remote places where few, if anyone, have ever explored and as a result of this field work, he has introduced many new taxa. Also, being a recognized grower, Cactus Data Plants since 1975, Woody has developed strong interests in both succulent plant taxonomy and the many cultivation secrets that help us to grow these unique plants.



Mammillaria bertholdii



President's Message

News Flash: If I count all the family memberships we're over 1,111 members.

The September meeting with our speaker, Woody Minnich, will be one you don't want to miss. We will try to record it and have it available for you to watch online. Don't forget that Greg Starr and Jan Emming's

presentations are available. Just go to meetings on our website and you will see how to view them.

Something new for our monthly meetings: The board has approved vendor sales from 6pm to 6:50pm. Two of our member vendors will be selling plants at our Thursday meeting. They are Mike Ellis and Bill Hess. I hope you will take advantage of this opportunity to acquire interesting plants. We will allow up to three vendors at our meetings. The rules for participation are available.

Fall is just around the corner! That means it is plant sale time again in the Sonoran Desert. Many of the botanical gardens and organizations will be having their sales in the next month or so. Check them out and participate, it's the thing to do.

On September 10, we have our Good Time Silent Auction at our Sky Island school site. Set-up starts at 1:00pm and the event starts at 3:00pm. See the article in this newsletter. This

is the event at which you can get rid of all those extra plants so you can make room for the new ones you acquire at the auction and at all the other plant sales you attend.

There are 4 major activities going on. A plant sale with all donated plants marked at \$2.00, \$5.00 and \$10.00. There is a free area for plants and garden related items that starts right after the end of the first silent auction so that everyone in attendance has an equal chance to get free stuff. There will be several silent auctions, one after another, depending on how many plants you donate to the auction. Finally, and most important ICE CREAM and ALL THE TOPPINGS. It just doesn't get better than this.

More information will be available at the September meeting, and in this newsletter. I hope to see you there.

Our Blooming Barrel Sale on August 20 was a great success we grossed over \$5,000 and sold everything except a few large barrels. I want to thank all the volunteers and attendees. Our rescue crew has been really active in August so we will have a lot of plants available. There could be another sale in October, the Halloween Sale.

Our thoughts are with Southeast Texas and I am sure that any financial help sent their way would be appreciated.

Thanks for all your support.

Dick Wiedhopf, President

Good Time Silent Auction
Sunday, September 10, 2017
Sky Islands Pub & High School
600 E 1 4th Street

We will start the set-up at 1:00pm and the party will start at 3:00pm
3:00pm to 5pm

Say good bye to summer and hello to the wonderful fall planting time. This event has been a Tucson Cactus Succulent Society tradition for more than 50 years.

This is a celebration: silent auctions, Free Plants, \$2, \$5, \$10 sale tables and Ice Cream with all the toppings. Bring your excess plants, pots etc for the free plant tables. All we ask is that your plants are free of disease and insects. Better plants will go on the \$2.00, \$5.00 and \$10.00 tables and special plants for the silent auctions, your choice.

Bid sheets and price stickers will be available at the event. The Board has adopted the same policy as we had at Sonoran XI with a high value special silent auction plants. These items will have an opening minimum bid of \$20.00 or more set by the donor. At the discretion of the donor, If the item sells for at least the opening bid the donor receives the opening bid price and any amount above that goes to the society. There are always special and or rare plant that will peak you interest.

In the past, we have had at least 3 separate silent auctions during the afternoon. Pots, plants, special cuttings, books, tools etc. are welcome donations for these silent auctions. Free Plants etc. will be available starting a 3:30pm in order to give everyone an opportunity to take some home. We will start the set-up at 1:00pm and the party will start at 3:00pm with the first silent auction ending at about 3:15pm and then about every 25 minutes there after. All you have to do is sign-in, get a bid number and then keep bidding until you hear **"PENCILS DOWN STEP AWAY FROM THE TABLE"**.

We need volunteers for set-up, sales, and clean-up. Come help and have fun, ask questions, talk with friends, etc., etc., Please feel free to bring your family and friends to this event. You don't have to be a member or bring plants or buy them, just come and enjoy the event. Everyone is welcome. More information call (520) 256-2447.

Please bring your plants and other items between 1pm and 2:45pm for inclusion in this event.

There are 4 bid sheets included in this newsletter for your convenience. Just cut, fill out the name of the item and your name only and leave the rest blank. We will finish the process when you bring the items for the auction tables.

Thank you

FROM THE FLORILEGIUM

Ferocactus wislizeni, the fishhook barrel cactus—now in its spectacular bloom season—was originally named *Echinocactus wislizeni* by Dr. George Engelmann in a botanical report that accompanied Dr. Adolph Wislizenus's *Memoir of a Tour to Northern Mexico* (1848). Engelmann's description of the cactus was based on a specimen collected by Dr. Wislizenus on August 5, 1846, near what is now Las Cruces, New Mexico.

"Before reaching Doñana, I met on the road with the largest cactus of the kind that I have ever seen. It was an oval Echino cactus, with enormous fishhook-like prickles, measuring in height four feet, and in the largest circumference six feet eight inches. It had yellow flowers, and at the same time seed, both of which I took along with some of the ribs; but I really felt sorry that its size and weight prevented me from carrying the whole of this exquisite specimen with me. Dr. Engelmann, perceiving that it was a new, undescribed species, has done me the honor to call it after my name." — Dr. A. Wislizenus

Friedrich Adolph Wislizenus (1810–1889) was born in Germany and studied medicine at the universities of Jena, Göttingen, Würzburg, and Zürich. In 1837, he emigrated to the United States and settled in the St. Louis area where he opened a medical practice. After a few years, feeling the lure of the American West, he joined a group of fur traders headed west. An account of his travels, *Journey to the Rocky Mountains in the Year 1839*, was published in German in 1840 and translated into English in 1912 by his son.

After returning to St. Louis, Wislizenus resumed his medical practice. He also began a lifelong friendship with the German physician and botanist, Dr. George Engelmann, who, ever in need of plant collectors, encouraged his friend to travel west once again to survey northern Mexico.

In May of 1846, Wislizenus set out for Santa Fe with a group of traders headed south to Chihuahua. War had just broken out between the U.S. and Mexico, and by the time they arrived in Chihuahua, anti-American feelings were rampant. The Americans in the trading party were detained in a remote village in the Sierra Madre for six months, during which time Wislizenus collected plants, recorded weather observations, and studied the villagers. In March of the following year, the 1st Missouri volunteer regiment entered Chihuahua and took control of the city, and Wislizenus joined the unit as surgeon. The soldiers from Missouri found the doctor's name difficult to pronounce, so for the few months he spent with the unit, he was known as "Whistling Jesus".

Wislizenus arrived back in St. Louis in July of 1847 and began writing an account of his travels. The government funded the publication of his memoir, which also included a botanical

report by Engelmann that described 180 plants collected by Wislizenus, many of which were previously unknown.

While in Washington overseeing the printing of his report, he became smitten with Lucy Crane, the sister-in-law of George Perkins Marsh, a Vermont congressman and conservationist. She had a number of suitors in Washington society and was indifferent to the doctor's attention. He returned to St. Louis where a cholera epidemic was raging in the city, so he had little time to dwell on his rejection. Eventually, he ended up back in Washington, looking for Miss Crane, only to find her absent. Marsh had been appointed minister to Turkey, and she had moved with the family to Therapia, some 5,000 miles away. Doggedly, Wislizenus managed to get a post as diplomatic courier to Turkey and turned up in Therapia, much to everyone's surprise. He resumed his romantic pursuit, and Miss Crane finally agreed to marry him.

The couple arrived back in the U.S. in November of 1850. Within the year, he left for California, thinking it might be a good place for them to settle, but ultimately he decided that area was unsuitable for raising a family as the gold rush had turned the population into a rabble. In 1852, the couple returned to the doctor's medical practice in St. Louis. The practice flourished, and he did not stray far from the city for the remainder of his life.

Engelmann and Wislizenus were among the founders of the Academy of Science of St. Louis, and Wislizenus contributed many scientific articles for the Academy's journal. He began to lose his vision in 1873, and his eventual blindness forced him to close his medical practice. His last years were spent in seclusion in his hilltop home overlooking the Mississippi.

The illustration of *Ferocactus wislizeni* shown here is by Tucson botanical artist Joan McGann. Joan earned a Bachelor of Fine Arts from Wichita State University and a Certificate of Excellence from the Arizona-Sonora Desert Museum Art Institute, Nature

Illustration Program. Her current works in botanical illustration have an emphasis on plants native to the Sonoran Desert. The forms and textures of cacti and succulents continue to be the most fascinating plant specimens for her drawings. Joan works on paper with graphite pencil, colored pencil, pen and ink, and watercolor. Her work is in the permanent collections of the Hunt Institute for Botanical Documentation, the Shirley Sherwood Collection and the Arizona-Sonora Desert Museum. She has received Best Drawing awards in international exhibitions with ASBA/HSNY and the New York Botanical Gardens.

More of Joan's work, including a larger portrait of *w*, can be seen at her website (www.joanmcgann.com). She has specialized in succulents, so the site will be of particular interest to TCSS members. And check out her Desert Matryoshka!



Ferocactus wislizeni, Fishhook barrel cactus © 2008 Joan McGann

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Deadline for newsletter text or photos:
Thursday, September 21 , 2017

TCSS Web Page:

www.tucsoncactus.org

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For additional information call: (520) 256-2447

Everyone is Welcome!

Bring your friends, join in the fun and meet
the cactus and succulent community.



Cacti Rescued - Since 1999
376 Rescues - 28,256 Volunteer Hours

Please see our Website Calendar for the next
rescued cactus sale. They are scheduled at various
times during the year based on our inventory.

TCSS Club Members receive a 10% discount

We need your "Eyes and Ears" to help us find new Cactus
Rescue sites. Please email us as much information as
you can from new project signs or from other sources to
Site@TucsonCactus.org. Attach a photo of the sign if
you can. Note, we do not remove plants from residences.

September 2017

Thursday, September 7, 2017 7:00pm

"The New, Rare and Seldom Seen Cacti and
Succulents of Mexico"

Presented by Wendell S. (Woody) Minnich

Sunday September 10, 2017 3 pm - 5 pm

TCSS Good Time Silent Auction at Sky Islands

Public High School, 6000 E. 14th St Tucson, AZ 85711.

Set-up 1 pm-3 pm. Auctions start at 3 pm.

There are always at least 3 silent auctions.

Tuesday September 12, 2017 at 7:00 pm

Board meeting, Ward 6 City Council office at
3202 E First St. Tucson, AZ

Annual Master Gardener Fall Plant Sale

Saturday October 7th, 2017 8:00-11:00am

Pima County Cooperative Extension, 4210 N. Campbell Av
Color your garden with plants grown locally or looking to
naturally attract butterflies and hummingbirds? We have
ageratums, salvias, milkweed and many more plants including
starter fig and pomegranate trees along with a selection of cacti
and succulents. Master Gardeners will be on hand to answer all
you're gardening questions. Sorry, no credit/debit cards, cash
or check only.

September Meeting Refreshments

Those with family names beginning with
Q - Z, please bring your choice of refreshments to the
meeting. Your generous sharing will
be greatly appreciated and enjoyed!



Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

October 2017

Thursday, October 5, 2017 at 7:00 pm

Lithops in Cultivation, from Ed Storms to Living Stones Nursery

Presented by Jane Evans

Born in Tucson, I have been a Sonoran Desert devotee my entire life.

I attended the University of Arizona where I received my BS in Plant Science. This is also where I met my husband to be Gene Joseph.

While in College my interest in Sonoran Desert Native plants as well as cacti and succulents began to develop. Perhaps one of my most memorable college plant moments was when Gene and I traveled to the Boyce Thompson Arboretum to meet Drs Frank and Carol Crosswhite.

Gene and I were members of the U of A Hort club. Feeling that the club should have a cactus collection but as you would imagine no money, it was suggested by our advisor Dr. Lemoyne Hogan, that we go to the Arboretum and ask the Crosswhite's for plants to start the collection. Meeting the Crosswhite's was an experience on its own but then they sent us home with my VW bug loaded to the gills with cactus. I remember still to this day riding home with cactus under my feet, all around me and in my lap!

After a year out of College working for the University Extension Service, I launched myself into self-employment on the corner of Stone and Blacklidge where I have worked for the last 38 years.

When I purchased the property in 1978 there was a flower shop and 2 greenhouses. For the next 12 years I ran the flower shop to pay the mortgage, always with my eye on the greenhouses and a way out of the flower business.

In 1986 Gene needed a place to start his nursery business and I had the perfect piece of property. The nursery, Plants for the Southwest, was born and the 2 greenhouses turned into 8! In 1987 we were able to purchase the Lithops collection of Ed Storms from his recently widowed wife Ruth and Living Stones Nursery was started.

In 1988 Gene and I married and you could say I came with a dowry:)

Finally in 1990 I was able to sell my flower shop accounts and move outside to the nursery. My working dream finally came to fruition.

The rest as they say is history or perhaps more correctly herstory!

Please be sure to come and enjoy a really special program that everyone will be sure to enjoy. Also, win a raffle plant or door prize, and pick up a free plant provided by the club when you depart the evening.



Sky Islands Public High School • 6000 E. 14th St.

TCSS Program Presentation

Thursday, November 2, 2017 at 7:00pm

"The science (and art) of taxonomy:
How we make sense of nature's diversity"
Presented by Mark Dimmitt

October Meeting Refreshments

Those with family names beginning with A - J, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!



President's Message

Its October! That means plant sale time.

We need to support Botanical Gardens and Cactus and Succulent Nurseries. They are the backbone of our hobby.

Visit Tohono Chul's Fall Plant Sale for an extensive offering of both the typical and the unusual, native, cold-

hardy, and arid-adapted plants from agaves to Zauschneria and everything in-between. Our Members' Only Preview hours have been extended due to the ever-growing popularity of this event. We encourage you to bring your own wagon, but we will have plenty on hand if you don't have one. Don't forget to check out our propagation greenhouse. Please note that the plant sale is located on the east side of the grounds in the Propagation Area at 7211 N. Northern Avenue, which is the first street just west of the Ina and Oracle intersection.

Members' Preview | Wednesday | October 11 | 12 – 6 p.m.

Open to the Public:

Saturday | October 14 | 9 a.m. – 5 p.m.

Sunday | October 15 | 10 a.m. – 4 p.m.

Propagation Area at 7211 N. Northern Avenue

Take advantage of fall's cooler weather and prepare your garden for the fall season ahead at Desert Botanical Garden's Fall Plant Sale. Choose from more than 30,000 plants, including cactus, succulents, trees, shrubs, groundcover, perennials, herbs/veggies and other oddities. Garden volunteers and staff horticulturists will answer questions and assist in plant selections. Specimen-sized plants and delivery services available.

Members will receive a 10% discount on all purchases when they present their membership card.

October 20, 2017 - October 22, 2017

Members Preview:

Friday, Oct. 20 | 7 a.m.-5 p.m.

Open to General Public:

Saturday, Oct. 21 | 7 a.m.-5 p.m.

Sunday, Oct. 22 | 7 a.m.-3 p.m.

Free admission

Boyce Thompson Arboretum

Fall Plant Sale Daily October 13 - 29

8:00 a.m. to 5:00 p.m. daily

Our 2017 Fall Plant Sale opens Friday October 13 with our special Members-Only preview day of shopping, and then continues daily through October 29. Wondering if we have specific plants in stock? Call our staff during daily business hours at 520.689.2723

Fall Plant Sale brings a great selection, also a prime time to buy annual membership at BTA, our annual members save 20-percent on plant purchases during this fundraising sale of trees, shrubs, herbs, flowers, cacti and succulents. Need planting and landscaping advice? Arboretum staff are joined by helpful volunteers from Pinal County's Superstition Mountain Master Gardeners program there to advise and assist buyers with suggestions for trees and smaller plants ideal for a wide range of landscaping projects. Special events during the October plant sale include lectures, guided tours and weekend wildflower walks; most are included with daily admission of \$12.50. Experienced BTA horticultural staff and Master Gardeners grow many of the plants we sell, and they maintain many of these same plants in the gardens and plant exhibits throughout the grounds - so they know firsthand how these plants perform, from nursery pot to maturity in your garden or landscape.

The Arizona-Sonora Desert Museum had their plant sale in September and I am sorry we missed notifying you in the last Desert Breeze.

The Tucson Botanical Gardens does not list a fall plant sale.

The International Sansevieria Society leadership is now in Tucson. Bob Webb is chairman and Alan Myklebust is their Journal editor along with Bob Webb. Both are members. More information about Sansevierias will be coming to our newsletter. Welcome!

Our thoughts are with the people of Puerto Rico and the Virgin Islands. How lucky we are to live in Southern Arizona.

Thanks for all your support.

Dick Wiedhopf, President

Nominations for Board of Directors and CSSA Representative

An elected nominations committee is seeking anyone interested in standing for election for one of the four (4) open seats on the Board of Directors (a 3 year term) or for one position (a 2 year term) for CSSA Representative. Send your interest to: info@Tucsoncactus.org and a member of the nominations committee will be in touch.

A slate of candidates will be presented at the November 2, 2017 meeting and nomination from the floor will also be accepted. A mailed ballot will be sent to every member following the regular November meeting and results will be announced at the December 10, 2017 Holiday Party.

FROM THE FLORILEGIUM

“Edward Palmer is a man well named. A palmer of the olden time was one who had traveled to the Holy Land in fulfilment of a vow, and brought back with him a palm branch to be placed on the altar of his parish church. Afterwards the name was applied to pilgrims who traveled unceasingly from land to land, under a perpetual vow of poverty and celibacy.

“This is what our Palmer has done. From the age of early manhood until now, the winter of his life, never content to remain inactive even for a short period, he has set out upon one pilgrimage after another, bringing back many palm branches and other strange and beautiful products of distant climes, reverently to lay them on the altar of science.” — *William Edward Safford, from his biographical sketch of Dr. Palmer read at a meeting of the Botanical Society of Washington, D.C., on January 10, 1911, on the occasion of Palmer's 80th birthday*

Three months after this tribute, Edward Palmer (1831-1911) passed away after a brief illness. Unrelenting to the end, he had the previous year made a six-month collecting trip to Tampico, Tamaulipas. At age 75, he had traveled to northwest Durango, a trip that required 8 days of travel by horseback to reach the collecting site. Throughout his very active life, he suffered regularly from ill health, and yet he persevered in his collecting travels.

Palmer's life through 1869 was surveyed in the July and August issues of the *Desert Breeze*. Beginning in that year, he was finally able to make a living solely through specimen collecting, with sponsorship over the years from the U.S. Department of Agriculture, the Smithsonian Institution, and the Peabody Museum. The constant pace of Palmer's travels from this point onward is remarkable. His collecting slowed only for a three-year period that he spent along the New England coast collecting marine specimens for Spencer Baird, the first U.S. Commissioner of Fish and Fisheries.

In the latter part of his life, Palmer continued to pursue his keen interest in archaeology that had begun earlier in Arizona. Beginning in 1875, Palmer spent considerable time in Utah unearthing burial mounds and collecting ethnological specimens for the Peabody Museum. Initially, he lived in St. George with a Mormon family who provided living quarters and ample working space. The family's children spent much time with Palmer who taught them proper specimen collecting techniques—and routinely paid them to remove cactus spines from his hands. He returned to Arizona repeatedly for ethnological collecting and made two important excursions into Mexico, the first to excavate mounds in San Luis Potosi and the second to work in prehistoric burial caves in west Coahuila. In addition to an enormous number of archaeological specimens collected for the Peabody during these two trips, the expedition to Coahuila produced some 17,000 botanical specimens. The quality and value of his work in Utah and Mexico led to an appointment as a field worker for the Smithsonian's Bureau of Ethnology in 1881. Palmer spent three years in Arkansas and Tennessee, with side excursions to several other states along the Mississippi, excavating burial mounds. He published two works on the use of plants by the indigenous peoples in the southwest, “Food Products of the North American Indians” (1870) and “Plants Used by the Indians of the United States” (1878).

Palmer's travels continued to the end of his life. He made several more trips into Mexico and returned to the southwest and California. His last field season with the USDA was

in 1893, after which he settled down, as best he could, in Washington where he worked on organizing and annotating his collections.

The final result of Palmer's many years of endless travel and persistence was a collection of more than 100,000 plant specimens and thousands more zoological and ethnological specimens and prehistoric artifacts. Palmer discovered more than 1,100 plants, and 200 of these bear the specific epithet ‘*palmeri*’. The genus *Palmerella*, a single-species genus, was named for him, as was the single-species genus *Malperia*, an anagram of ‘*palmeri*’. In naming *Palmerella*, the botanist Asa Gray acknowledged Palmer's “indefatigable and fruitful explorations of the botany of the southwestern frontiers of the United States, from Arizona to the islands off Lower California, in which region he has accomplished more than all his predecessors.”

In 1875, after having been stranded on Guadalupe Island for months with nothing to eat but the island's feral goats and vegetation, Palmer eventually made his way to San Diego where, in the course of a few months, he collected several thousand botanical specimens. One plant, collected in August in San Diego County, was *Amaranthus palmeri*, Palmer's amaranth. The illustration of the plant shown here is one of Lucretia Hamilton's superb drawings of Arizona's weeds. At the bottom right are the male and female flowers, which are borne on separate plants. With sufficient water, the plant can easily grow to 10' in height with a 2-3" diameter stem. A single female plant can produce more than 500,000 seeds. The leaves and seeds of Palmer's amaranth were an important food source for many Native American tribes in the southwest.

Also known as pigweed, this Sonoran Desert native can be an extremely vigorous plant under the right conditions and is a very costly weed for farmers in the Midwest and South—one that has also become resistant to many common herbicides. This has pushed farmers to ever more extreme measures to control it. One herbicide, dicamba, is very effective for killing pigweed. Genetically modified soybean and cotton seeds have been developed to withstand the application of this potent herbicide. Many farmers, however, do not use these seeds, and the “drift” of the dicamba from GMO field to non-GMO field has caused major losses for farmers using traditional seed. Dicamba was temporarily banned from use in Missouri and Arkansas this summer. There are now reports from farmers that Palmer's amaranth has become resistant to dicamba.



Amaranthus palmeri, Pigweed, © Lucretia Breazeale Hamilton

PIMA PRICKLY PARK



DID YOU KNOW?

Our very own Editor of the Desert Breeze was born in Switzerland!

As a relative “newbie” to TCSS, I think it is important to know about the history of TCSS and PPP, and especially about those individuals who make them great! I had the delight of interviewing Karen Keller and learning more about her background and her passion for succulents!

Karen came to Tucson to attend a wedding in 1996. She got off the plane and saw her first saguaro! Although she loved Switzerland, her work in graphic design for an ad company there was not the right fit. Karen later moved to Tucson permanently and worked for a period of time in a cactus nursery. Her connection to TCSS is through Vonn Watkins who introduced her to succulents!

Karen cherishes being outdoors. Not only an avid runner, she enjoys being out in nature whereas her schedule allows... she enjoys exploring art through watercolor and mixed media. She shared that she inherited her love of art and creativity from her mother.

Karen not only creates and designs our newsletter, she is a graphic designer for the educational company Learning A-Z in Tucson. She designs the layouts for their educational books which are published in French, Polish, Vietnamese, Spanish, Ukrainian, and English.

Thanks to you Karen, we have a beautiful newsletter that not only presents a variety of topics and resources, but keeps each member informed as to key topics and events!

Cari Wright

WHAT'S NEW?

Linda Heisley shared the following:

“Joe and Patsy found this red wagon for our use in the Park.

Joe outfitted the cart to pull it. It's light and it dumps. I'm sure it will get used as new projects kick off.”

“A TCSS member removed this beautiful agave from his yard and donated it to the Park. It's a lovely plant.”



TCSS BOARD

Officers

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Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Susan Durham

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Thursday, October 19, 2017

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Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

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October 2017

Thursday, October 5, 2017 7:00pm

"Lithops in Cultivation, from Ed Storms to
Living Stones Nursery"

Presented by Jane Evans

Tuesday October 10, 2017 at 7:00 pm

Board meeting, Ward 6 City Council office at
3202 E First St. Tucson, AZ

Acknowledgement of Contributions

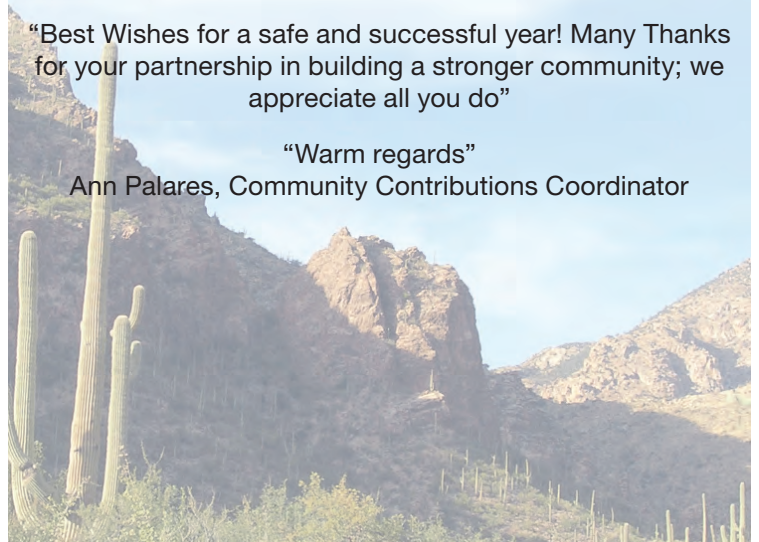
The names below represent the Tucson Cactus & Succulent Society members and friends whose donations helped make this year a success. We extend our sincere thanks for your support.

"Tucson Electric Power is pleased to support the Tucson Cactus & Succulent Society, Inc. with the enclosed \$125.00 donation in honor of our 125th Anniversary, thanks to the volunteerism of Christina Frazer"

"Best Wishes for a safe and successful year! Many Thanks for your partnership in building a stronger community; we appreciate all you do"

"Warm regards"

Ann Palares, Community Contributions Coordinator





Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

November 2017

Thursday, November 2, 2017 at 7:00 pm

The science (and art) of taxonomy: How we make sense of nature's diversity

Presented by Mark Alan Dimmitt



Mark A. Dimmitt has a Ph.D. in biology (herpetology) from the University of California at Riverside after earning an M.S. from UCLA and a B.S. from Pomona College. He worked at the Arizona-Sonora Desert Museum from 1979 to 2011, first as Curator of Botany, and eventually as Director of Natural History (field ecologist). His areas of research included botany and vertebrate biology, and he is the author of more

than 50 scientific and popular publications about ecology and horticulture. He is a Fellow of the Cactus and Succulent Society of America. His major publication is the plant and ecology chapters of *A Natural History of the Sonoran Desert* (2000), and is the senior editor of the revised edition (2015).

Mark's other and ongoing career is as a plant breeder. He spent a couple of decades hybridizing *Trichocereus* (Echinopsis, cacti), then *Tillandsia* (bromeliads); he has introduced about 50 cultivars. Since the late 1970s his main focus has been on hybridizing the genus *Adenium*; 'Crimson Star', 'Evelyn Marie', and 'Bouquet' are among his creations. He is coauthor of the book *Adenium: Sculptural Elegance, Floral Extravagance* (2008). Mark also collects and grows a number of other weird plants, mostly succulents and epiphytes.

This will be our last program presentation for 2017. Please be sure to come and enjoy a very special program (seeing in person will always be best). Win a raffle plant or door prize, and be sure to pick up a free plant provided by the club as you depart.



Carnegiea gigantea Mark Dimmitt ca. 1995

Continued on Page 2



Sky Islands Public High School • 6000 E. 14th St.

Holiday Party

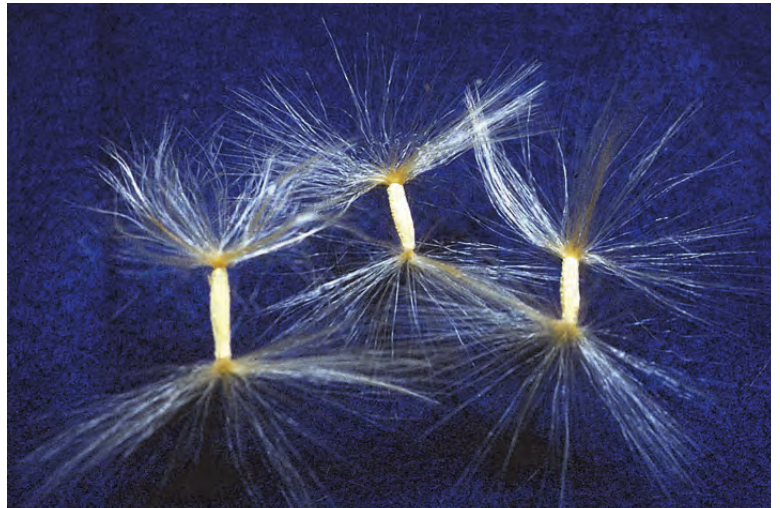
Sunday, December 10, 2017
Sky Islands Public High School
6000 E. 14th St.

November Meeting Refreshments

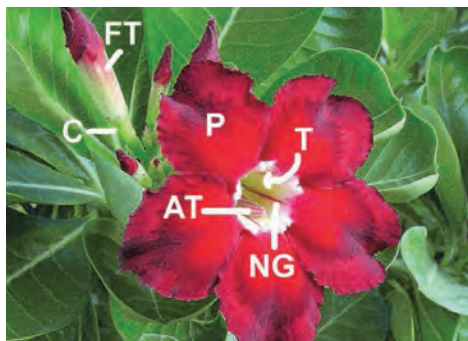
Those with family names beginning with K - T, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!



(L to R): *Echinopsis*, 2 *Lobivia*, *Trichocereus*, 2 *Helianthocereus* Mark Dimmitt 1987



Adenium somalense seeds Mark Dimmitt 1995



Flower Parts



Foliole



Opuntia engelmannii Mark Dimmitt ca. 1985



President's Message

I hope some of you took the opportunity to attend one of the plant sales in October and supported the efforts of several botanical gardens. I attended all of them and had a great time not only seeing old friends and representing TCSS but buying interesting plants. There is always some plant that I must have. It's a disease!

This is a strange climate year for growing cacti and succulents. We haven't had sufficient rain for months and watering has become a substantial chore. Many plants have not responded well to the extreme heat waves and lack of rain. I am constantly finding potted plants that are dry as a bone and watering just doesn't work. They really have to be soaked for a period of time. There doesn't seem to be rain in the near future and the normal cycle of frost from November 15 to March 15 may no longer be the case. Everyone must pay more attention to the changing weather patterns than ever before.

Tell us your successes and failures on our new Facebook page. Other members will benefit from your stories.

The annual Holiday Party is only a month away, so start thinking about your favorite recipe to share with everyone who attends. Seating is limited so when you get the mailing in the next week or so, please respond quickly if you plan to

attend the party on December 10th. Remember, there is not a regular meeting in December.

The mailing will also be an opportunity to renew your membership. You can renew for several years at a time or even purchase a life membership. All that information will be in the mailing.

Since we are recognized by the IRS as a 501(c)3 your donations may be tax deductible. Each year many of you have been very generous and it is certainly appreciated. Your contribution certainly has helped the projects you have designated and unrestricted money has supported new and continuing projects.

The one that I think will make a real difference to everyone is the recording of program presentations, giving access for all members to hear and see the meeting. Just go to meetings on our website and click on the meeting programs which are available. In a few years this will be one of our great resources. Honestly, it would be impossible to have a meeting where all 1100+ members could attend. I want to thank again Peter Ertman, Doug Rowsell and Keimpe Bronkhorst for making this a reality.

Wishing all of you a Happy Thanksgiving with family and friends.

Thanks for all your support.

Dick Wiedhopf, President

FROM THE FLORILEGIUM

As with the many events in 2009 celebrating Charles Darwin's birth, 2017 has seen a flurry of exhibits and conferences marking the bicentenary of Darwin's close friend and colleague, Sir Joseph Dalton Hooker (1817–1911). Hooker was Britain's preeminent botanist in the 19th century, an intrepid explorer, an early student of geographical botany, and the greatly esteemed director of London's Kew Gardens for twenty years.

In March, a six-month exhibition, "Joseph Hooker: Putting plants in their place", opened at The Shirley Sherwood Gallery of Botanical Art at Kew Gardens. The exhibit included items from Kew's Joseph Hooker Collection—maps, photographs, letters, artifacts, sketches, journals, and his published works with the original artwork by Walter Hood Fitch. The Hooker exhibit was accompanied by works of 80 contemporary British botanical artists.

In June, Kew also hosted "The Making of Modern Botany", a conference exploring Hooker's contributions to science and modern botany. Hooker's birthplace of Halesworth, Suffolk, held an exhibit in July of art by contemporary botanical artists. "Joseph Dalton Hooker: A Legacy of Beauty" featured artworks portraying plants discovered by and named for Hooker.

Kew has also been engaged in the Joseph Hooker Correspondence Project, a joint effort with Sussex University, to transcribe and digitize his letters, both scientific and personal. These can be read online as they become available. The Biodiversity Heritage Library has several of Hooker's publications available online. They also have a Flickr collection of artworks that illustrated Hooker's works. (Links to these resources can be found through the home page on the Florilegium Program's website (www.art-botanical.org))

Joseph Hooker was the son of William Jackson Hooker (1785–1865), a professor of botany at Glasgow University and, later, director of Kew Gardens. The younger Hooker completed a medical degree in 1839 and promptly set off on a 4-year polar exploratory voyage to the Antarctic as assistant surgeon and botanist aboard the HMS Erebus. Plants were collected from the islands off the coast of Antarctica as well as from the continent.

Hooker's spare time during the voyage reading a proof of Darwin's Voyage of the Beagle given to him by a friend before sailing. Upon his return, Darwin asked the young botanist to classify the plants he had collected in South America and the Galapagos. They became fast friends and supportive colleagues. Joseph Hooker was the first man of science to publicly endorse Darwin's theory of evolution by natural selection.

As director of Kew, Hooker's father obtained funding for the publication of illustrated floras of the plants from Hooker's Antarctic voyage. Completed in 1859, the 6-volume work described plants from Antarctica, New Zealand and Tasmania and was accompanied by superb lithographs by noted illustrator Walter Hood Fitch.

William Hooker also made it possible for his son to travel to

India to obtain plants for the gardens at Kew. Hooker was the first European to collect plants in the Himalayas and the first to sketch Mt. Everest, although its significance at the time was not known. His 2-volume *Himalayan Journals* was dedicated to Charles Darwin. Subsequent publications from this trip were *Flora Indica*, the 7-volume *Flora of British India*, and *Rhododendrons of Sikkim-Himalaya*, beautifully illustrated by Fitch.

In 1865, Hooker succeeded his father as Director of Kew. He continued his travels abroad to obtain specimens for the Gardens, visiting Palestine, Morocco, and the United States. Perhaps his most important work during this time was *Genera plantarum*, a 7-volume taxonomic system based on plants in Kew's collection, a project on which he labored for 23 years with George Bentham, a noted botanical systematist at Kew.

One of the most beautiful works produced by Hooker and Fitch is *Illustrations of Himalayan Plants*. The original drawings for the book were done by a group of Indian artists for James F. Cathcart, an Englishman who lived in the Himalayas for many years. He requested Hooker's assistance in getting them published in a manner similar to *Rhododendrons of Sikkim-Himalaya*. Cathcart gave his drawings to Hooker but died before the project could begin. Fitch redrew some of them and added drawings from Hooker's sketches of plants that Cathcart had not included.

The illustration here is Fitch's lithograph of *Rheum nobile*, the alpine Sikkim rhubarb, prepared from a sketch by Hooker. The plant grows at elevations of 13,000–15,000 feet and can grow to 6' tall. Hooker notes in his description that he could easily see the plant from a mile away. The plant's unique adaptation is its tower of translucent bracts that create a protected environment for the flowers, shielding them from the altitude's UV radiation and freezing temperatures. Note in the lower left the depiction of the plant in its habitat.

Hooker's travels in the United States in 1877 with Asa Gray and John Muir will be covered in the December Desert Breeze.



Rheum nobile, Sikkim rhubarb, Hand-colored lithograph by Walter Hood Fitch, From *Illustrations of Himalayan Plants*, 1855

PIMA PRICKLY PARK



DID YOU KNOW?

The amazing physical developments in Pima Prickly Park are accomplished through the efforts of committed volunteers.

Our own Linda Heisley is the Volunteer Coordinator for Pima Prickly Park, as well as being “boots on the ground”directly involved in the labor-intensive planting, watering, and the creation of new gardens in the park. Linda shared with me her background and involvement in the TCSS and Pima Prickly Park:

I was born in Chicago and in my early twenties decided I preferred sunny and dry Tucson to grey and damp Chicago. Owned a pizza restaurant for two years and after a few odd jobs I started working for Burr Brown, an electronics company. I worked there for 32 years primarily in the planning department. In the late 90's I read about TCSS and joined so that I could participate in the rescue program. Around 2011 I heard about the proposal of Prickly Park and joined the original team as details between TCSS and Pima County were hammered out. I participated in workdays and started showing up at the park to water the new “gardens”. That led to coordinating other volunteers willing to work at the park. For a few years there were just two of us at the park on a weekly basis. In this past year there have been 4-6 people showing up every week to plant, water, create new gardens etc.and we are making noticeable progress!

I officially retired in 2013 and enjoy volunteering for nonprofit

organizations in town and traveling. I feel fortunate to be part of TCSS and working with Pima County to create a wonderful open space for the community using rescued and donated plants. TCSS members are very generous when we put out a call for a particular plant or when we have a workday.

Pima Prickly Park is a great example of a partnership between TCSS and the county resulting in a place all are welcome to enjoy the desert.”



Sunday, December 10, 2017 • 3-5PM

Tucson Cactus and Succulent Society Holiday Party & Gift Exchange

Sky Islands Public High School, 6000 E. 14th Street

Set-up starts at 1pm bring food at 2:30pm
Dinner and Program-3pm till 5pm

The Society will provide Turkey, Ham, Shrimp,
Condiments, tableware and Drinks
(coffee, punch and water)

You will provide your favorite recipe
(enough for 10+ servings) Hot or Cold

Salads – Starches – Vegetables – Desserts
(Please bring serving dish and serving utensils)

This has been another great year;
let's make it special for others.

Please bring donations (\$ preferred)
for the Tucson Community Food Bank

Gift Exchange:

Everyone can participate by wrapping (cleverly) a plant or plant related gift of at least \$10.00 value. If you bring a gift you get a gift and we have a fun way of distribution. Additionally, there will be a short Annual Meeting, Election results, Awards and Table decoration plants to be given away.

IMPORTANT

In the next few weeks, you will be receiving a mailing containing a RSVP for the Holiday Party, ballot for the elections and membership renewal and donation for 2018.

Please return by December 6, if you are planning to attend the Holiday Party. (seating is limited)

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How we make sense of nature's diversity"

Presented by Mark Alan Dimmitt

Tuesday November 14, 2017 at 7:00 pm

Board meeting, Ward 6 City Council office at
3202 E First St. Tucson, AZ

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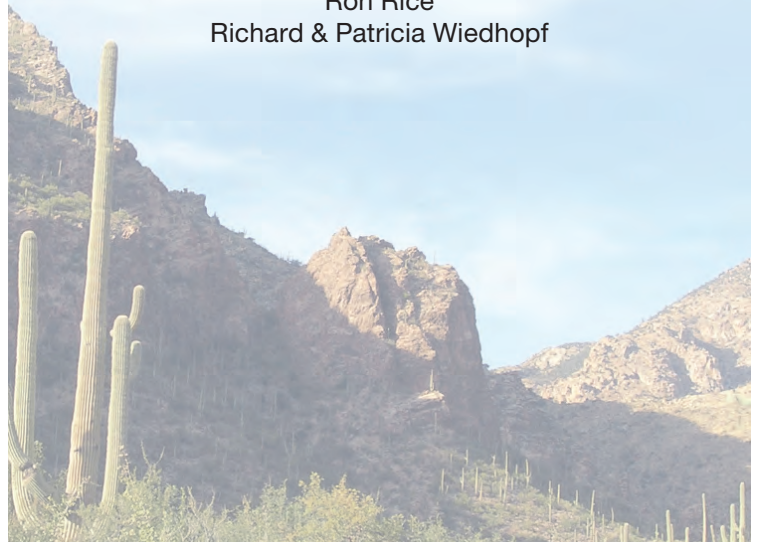
Unrestricted Gift

Larry & Rowena Matthews

Pima Prickly Park

Ron Rice

Richard & Patricia Wiedhopf





Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

December 2017

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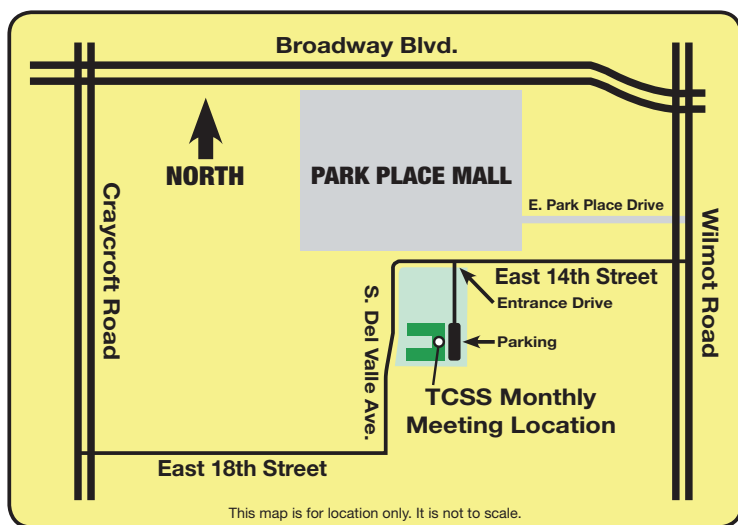
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Sky Islands Public High School • 6000 E. 14th St.

Our sincere thanks for the Items Donated to Pima Prickly Park in November

Joan Dodson	Saguaro
Roger Salzgeber	Storage Cabinet
Bill Thornton	Large and small cacti
Beth Woodin	Specimen potted cacti & succulents
	18 large pots

TCSS Program Presentation
Thursday, January 4, 2018 at 7:00pm
"Where Did I Go Wrong"
Presented by Chuck Hanson



President's Message

We end this year with more than 1,150 members and a list of accomplishments that are amazing. The society is solid financially and additional financial support from members is outstanding. A financial report will be printed in this newsletter in February.

On November 30, 2017 the first Ferocactus in the Monrad Ferocactus Garden at Pima Prickly Park has been planted (see photos). We have been working toward this for more than 2 years and now it's a reality. We have several different species on hand to be planted in the next few weeks. The future will include rockscaping, signage, plant education pamphlets and of course more Ferocactus. Our thoughts are to gather 10 or more of a species, if possible, before planting. This will give an impact to species and the garden overall.

I thank all of you who lead and/or participated in the many programs that this Society supports.

Cactus Rescue	Monthly meetings
School Grant	Pima Prickly Park
K-12 Education programs	Home Tours
Research Grants	Florilegium Program
Sonoran Conference	Publications
Plant Sales	Conservation
Good Time Silent Auction	Our Library

On Saturday, December 2, we had a rescue plant sale at the Rincon Valley Farmers Market. This was the idea of our rescue coordinators Donna & Robert Ellis. They were joined by 6 more members. Most of the plants were sold and along with a new membership, gloves and a Field Guide the total sales, without any advertising, were \$1,240. It has been a long time since we had a sale on the far east side of Tucson. In this next year, depending on availability of rescued plants, we will have sales in different areas of Tucson and Southern Arizona.



Tom Ganser, Roger Salzgeber and Vonn Watkins plant the first Ferocactus in the Monrad Ferocactus Garden.



Ferocactus glaucense cluster

In the Daily Star on this past Sunday, our "Field Guide" was one of the highly recommended gardening books. It included a picture of the cover and a small write-up. That's Great!

The Holiday party is Sunday, December 10. If you have not RSVP'd check with me by email (president@tucsoncactus.org) if seating is available. Don't forget the gift exchange (plant or related item with at least \$10 value). "Bring a gift, get a gift"

We always collect money (preferable) for the Community Food Bank at the Holiday Party.

Thanks for your support and another great year

Dick Wiedhopf, President

PIMA PRICKLY PARK



DID YOU KNOW?

November is the "beacon of hope" for cooler weather in the Old Pueblo. October "flirts" with us with Halloween and small hints of Fall, but November "brings it home" with Thanksgiving and folks raking up the fallen cactus needles!

(Well, the last part doesn't happen, but Fall does remind me of childhood joy in New York raking up leaves into great piles and jumping into them with my siblings!)

WHAT'S HAPPENING?

Pima County celebrated Halloween with a "Trick or Treat Walk in the Park". A couple of stations with water and treats were available for everyone who attended. Staff and volunteers dressed in creative costumes for the event! Great fun had by all !

Linda Heisley shared that our red wagon has been very busy moving Jessie's cholla donations to their new home in the cholla maze. The wagon has been a wonderful asset !

(....and thank you, Jessie !)

A SPECIAL "GIVING OF THANKS"

If Pima Prickly Park could speak, it would....without a doubt....express it's THANKS to each and every one of you who have been (...and continue to be) instrumental in its development. It would share it's GRATITUDE for those who have generously donated their valuable time, creativity, and energy, as well as the generous gifts of plants and materials.

On behalf of Pima Prickly Park, may you have safe travels this month and next...and a very Happy/Merry Holiday season----
---Cari Wright

FROM THE FLORILEGIUM

The early career of Sir Joseph Dalton Hooker (1817–1911), famed explorer, prominent botanist, and director of Kew Gardens, was described in the *November Desert Breeze*.]

Between 1839 and 1871, Hooker's travels had taken him to Antarctica, New Zealand, Tasmania, India and the countries of the Himalayas, Syria, Palestine, and Morocco. In June of 1877, he accepted at long last an invitation from his friend Asa Gray (1810–1888) to visit the United States. Gray, professor of botany at Harvard and America's preeminent botanist, organized an expedition to the western part of the country, beginning in Colorado, with their primary goal being to test their ideas about geographical plant distribution.

They began their expedition at La Veta Pass in the Sangre de Cristo Mountains. From there, they climbed Blanca Peak (at 14,351') and later, Pikes Peak and Grays Peak—Asa Gray now age 67 and Hooker a bit younger at 60. Hooker wrote to his assistant at Kew: "I got up to 14,300 on Gray's peak without

difficulty (on my legs) but I have not the wind & muscle I had & indeed the mountain climbing here is pretty severe work."

From Colorado, Gray and Hooker traveled on to Utah and Nevada, ending up in California where they joined forces with John Muir (1838–1914) and collected plants on Mt. Shasta. Muir recalled their trip later in his tribute to Linnaeus:

"...of course we talked of trees, argued the relationship of varying species, etc.; and I remember that Sir Joseph, who in his long active life had traveled through all the great forests of the world, admitted, in reply to a question of mine, that in grandeur, variety, and beauty, no forest on the globe rivaled the great coniferous forests of my much-loved Sierra."

Hooker's ten-week, 8,000-mile American excursion yielded some 1,000 plant specimens for Kew and enough information for Gray and Hooker to write a paper on the geographical distribution of plants of the Rocky Mountain region that was published in the *Bulletin of the U.S. Geological and Geographical Survey* in 1881.

During Hooker's first days of botanizing in Colorado, he found the lovely Apache plume, *Fallugia paradoxa*. The following year, *Curtis's Botanical Magazine* published Hooker's brief telling of that encounter, accompanied by an illustration of the plant by Anne Henslow Barnard (1833–1899), one of Kew's highly skilled illustrators and Hooker's sister-in-law.

"I gathered it in company with Dr. Gray on the Sierra Blanca at about 7000 feet in elevation in the southern part of Colorado, bordering New Mexico, whence the seeds were sent to England in 1877. The copious large white blossoms on the slender branches, moving with the slightest breath of wind, gave the bushes a very beautiful appearance. The plant flowered for the first time in July of the present year [1882], in the royal Gardens, in an open border of the herbaceous grounds."

Additional information about Hooker's life and his impressions of America and Americans can be found through the home page on the Florilegium Program's website (www.art-botanical.org).



Fallugia paradoxa, Apache plume
Curtis's Botanical Magazine, Vol. 108, 1882
Anne Henslow Barnard, illustrator; J.N. Fitch, lithographer



The 1877 expedition party at La Veta Pass, with Hooker and Gray in lower left, Gray seated on the ground holding a plant press



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389 Rescues - 30,326 Volunteer Hours

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December 2017

Sunday, December 10, 2017 3:00 to 5:00pm

TCSS Yearly Holiday Party and Gift Exchange. Note: there is no first Thursday of the month meeting this month.

Tuesday December 12, 2017 at 7:00 pm

Board meeting, Ward 6 City Council office at 3202 E First St. Tucson, AZ

In Memoriam

December 1, 2017, Kevin Barber passed peacefully in the arms of his wife Helen. Kevin was a great friend, colleague and life member of the Tucson Cactus & Succulent Society (TCSS). We served together on the Board of Directors for TCSS and the Cactus and Succulent Society of America (CSSA). Kevin created much of the technology we use today. He loved to take pictures of cacti and succulents and you can view many of them on our website. Kevin took many of the pictures for the Adenium book which he and Helen sponsored. He was also convention chairman for the 2009 CSSA convention in Tucson. Kevin and Helen purchased Rainbow Gardens Bookstore and after many years of operations in Tucson, closed the Bookstore and donated the entire book inventory to TCSS to benefit our Society.

We were also colleagues at the University of Arizona, College of Pharmacy where his technology expertise enables the college to spin off a new for-profit company.

Twice a year, for the past decade, Kevin and I made the very early morning drive to the Desert Botanical Gardens sale in Phoenix which starts at 7:00am. Our record is #7 in line. After a buying spree at the sale, we would spend the day visiting other nurseries and botanical gardens, always ending up at Arizona Cactus Sales enjoying the friendship of Jim or Tye.

On behalf of the Tucson Cactus and Succulent Society we send our sincere condolences to Helen and their friends and family.

TCSS BOARD

Officers

President: Richard Wiedhopf • president@Tucsoncactus.org

Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Susan Durham

secretary@Tucsoncactus.org

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treasurer@Tucsoncactus.org

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board@Tucsoncactus.org

(terms expire December 31 of year indicated)

Teresa Curtis (2019)

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CSSA Affiliate Rep:

Bill Holcombe (2017)

Cactus Rescue: Donna Ellis

cactus@Tucsoncactus.org

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Field Trips/tours Rob Romero/Joie Guinta

trips@Tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:

Thursday, December 21, 2017

TCSS Web Page:

www.tucsoncactus.org

Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

Everyone is Welcome!

Bring your friends, join in the fun and meet the cactus and succulent community.