



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

January 2019

Thursday, January 3, 2019 at 7:00pm

The Other Big Bend, Travels in Big Bend Ranch State Park

Presented by Rob Romero

Big Bend National Park is an incredible showcase of the Chihuahuan Desert. If one heads to the west, you run into Big Bend Ranch State Park, an equally incredible park that offers a more "rough it" style of park. Almost no one visits this park in comparison to the national park but it is home to some unique geography and an endemic cactus, *Echinocereus viridiflorus* var. *canus*.

Rob has been a desert rat and cactus enthusiast for over 25 years and with his first visit to Big Bend Ranch State Park in

2010 he was hooked and has visited the park 6 times (so far!). The geography and more importantly the cacti of the park will be presented to show just what a special place this really is.

Welcome to a New Year! Please come and enjoy a special program presented by Rob and really enjoy an excellent evening with friends, fun, books, raffle plants, free plants and lots of really great refreshments.



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

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

TCSS Program Presentation
Thursday, February 7, 2019 at 7:00pm
Hens and Chicks
The Vitko Collection
Presented by Don Vitko

January 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

Happy New Year.

We ended 2018 with a fantastic sale of Saguaros for members only. This was our first members only sale and it was really appreciated by all who attended. We will do this again when we have a substantial number of plants. Right now we have only a few barrels left in our inventory.

This year will be the 20th anniversary of our rescue program and we are making plans for a big celebration.

We have a new Secretary, Monica Wnuk and two new board members: Jessie Byrd and Crystal Cannon. Noe' Mayotte will

be filling the balance of the term of Theresa Curtis. They along with the continuing board members and officers will make up a great team.

I am processing all the renewal and new memberships and this always takes more time than expected but will be accomplished in the next week or so. For those of you who have participated in the rescue program, the cactus bucks will be sent out in the next two weeks. This is our way of saying thank you!

Protect your plants, enjoy the cooler weather, and remember it will be summer before you know it. I wish you good health and good growing.

Thank you for your support

Dick Wiedhopf, President

Acknowledgement Of Contributions Donars as of 12/27/2018

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

Genie Miskell
Mark Nall
Vonn Watkins

Education

George & Emojean B. Girard
Amanda Joyce Higgins
Daphna Lederman
Teresa Wyatt
Lindsey & Barry Abrahams
Joey Tanner Barbee
Genie Miskell
Carol J. Owens
Donald Poling
John J. Ross
Richard Ryan
Vonn Watkins
Sharon Atwell
Dennis Murphy & Nancy Beck
Chuck Penson & Kathryn Bevacqua
Susanna & Lucas Schippers
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Matthew B. Johnson & Patricia A Rorabaugh
Phyllis Killeen
Jerry & Colette Price
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Research

Linda Kappel
Genie Miskell
Vonn Watkins
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Albert Everaerts & Greta Janssen
Patricia H Waterfall

Conservation

Brian & Nico Powell
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Genie Miskell
Tim & Karen Morey
Dennis Murphy & Nancy Beck
Richard Poppy & Juliana Rose Teal
Vonn Watkins
Linda Kappel
Mark Mason
Eloise Gore & Allen Hile
Saralaine E. Millet
John & Ann Tundermann
Susan Richards
Albert Everaerts Greta Janssen
Jerry Price Colette Price
Patricia H. Waterfall
Jan Konstanty & Pat Wallace
Toni Yocum & Robert H. Webb

Florilegium

George A & Emojean B Girard
Chris Marshall & Sandra Marshall
Genie Miskell
Vonn Watkins
Carol J. Owens
Eloise Gore & Allen Hile
Ralf Holzheu
John Gilkey & Laurel Cooper
Matthew B. Johnson & Patricia A. Rorabaugh
Paul Shaw & Jeanine Derby

Pima Prickly Park

Joe Bacik
Nancy Eswein & Angela Guida
George & Emojean B. Girard
Constance Elson
George Eversole

Morgan Goldberg
David & Linda Hydukovich
Genie Miskell
Donald Poling
Jan & Pat Wallace
Gregory Smith
Monty & Karen Turner
Paul Cook
Ralf Holzheu
Donn Weaver
John Gilkey & Laurel Cooper
Ray & Pat Merritt
Stephan Baier & Family
Christine Flanagan & Allan Morgan
Gene Milbrath
Cathy Robson & Jon Robson
Steven Schmidt & Family
Barbara Walker & Phil Feigin
Judee Wickersham & Art Wickersham
Marian Alaback
Jim Bliss
Linda Heisley
Dianne & Ravi Sethi
William Thornton
Vonn Watkins
Chuck Huckelberry & Family

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Val L. Little
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Peter & Allison Megaw
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Fiona Clark & Jim Boggs
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Nicole & Michael Montroy
Wendell & Rosemary Niemann
Kris Thompson
Betty Bengtson
Walther Ellis, Jr
Connie Engard
Kristine Klewin & Family
Suzy Lillis
Alyce Pennington
John & Jocelyne Rivers
Jan Schwartz & Judith Mcdaniel
Paul Shaw & Jeanine Derby
Scott Sherman
Nancy Regis Slutter
Judee & Art Wickersham
General John Almquist & Lolly Almquist
Dean & Jenny Brick
Cathy, Elias, Naheli & Ellis Cabezas
Robert V. & Donna L. Ellis
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Barbara Kelly
Phyllis Killeen
Don & Maribeth Morehart
Vickie & John Veen
Colette M. Altaffer
Betsy Zukoski

TCSS DESERT GARDEN TOURS

For the past several years TCSS has held a series of garden tours allowing our members to share their cactus and succulent landscapes with other society members. Each year the committee tries to put together a group of gardens that are somewhat close in location so that driving from one to another isn't too time consuming. As we start out the new year, we would like to compile a list of members who might be interested in being on future tours. If you would consider opening your personal garden for a tour either in 2019 or another future year, please send an email to gardentours@tucsoncactus.org or call Patsy at 575-7126. As we gather interested participants we will be able to group them by location and make plans for future tours. Being on

a TCSS Desert Garden Tour is a fun way to showcase your interest in gardening with cactus and succulents and a real gift to other members.

Thank you for your consideration. Please contact us with any questions. Your TCSS Desert Garden Tour Committee gardentours@tucsoncactus.org

TCSS BOARD

Officers

President: Richard Wiedhopf • president@Tucsoncactus.org

Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Monica Wnuk
secretary@tucsoncactus.org

Treasurer: Cathy Robson
treasurer@Tucsoncactus.org

Board of Directors:
board@Tucsoncactus.org
(terms expire December 31 of year indicated)

Keimpe Bronkhorst (2021)
Jessie Byrd (2021)
Crystal Cannon (2021)
Linda Heisley (2021)
Steve Chesser (2020)
Donna Ellis (2020)
Bill Salisbury (2020)
Kris Thompson (2020)
Noe' Mayotte (2019)
Peter Ertman (2019)
Don Morehart (2019)
Thomas Staudt (2019)

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Bill Holcombe (2019)

Cactus Rescue: Donna Ellis
cactus@Tucsoncactus.org

Education: Caryl Jones • education@Tucsoncactus.org

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

Programs: Vonn Watkins • programs@Tucsoncactus.org

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

Vendor Coordinator: Dale Johnson • vendors@tucsoncactus.org

Plant Sales: Linda Heisley • sales@tucsoncactus.org

Field Guide Sales: Susan Durham & John Durham
books@tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thrsday, January 24, 2019

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.

9 2 1 8 5
4

Cacti Rescued - Since 1999
416 Rescues - 32,866 Volunteer Hours (updated 12/22/18)

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.

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Thursday, February 7, 2019 at 7:00pm

North Dakota Peace Gardens

Presented by Don Vitko

Don Vitko was born and raised in North Dakota. He started growing cacti with a single seed packet in the early 1960's at his grandparents farm. His grandma was a grower of many plants and huge gardens and she actually got Don interested in growing plants. He picked cacti because they were the only plant that made it without daily care while he was in school. Mainly because the farm was 70 miles away from his home town Minot, North Dakota.

In 1968 Don got his first 8'X12' wood frame greenhouse. From there his collection started growing and expanding into many greenhouses until 2010 when the International Peace Gardens in North Dakota asked him about plants for their conservatory that was currently under construction. Don then decided to donate his entire collection of 6800 plants with over 5000 species. The move started with the big plants in 2010 then in 2011 Minot had a huge flood pushing the move into just a few days.

Don and his wife Kim retired in 2015-16. Kim was a nurse and Don was a salesman for beer for 20 years, then commercial tires for 25 years. He and his wife now live in the Oro Valley area. He is a volunteer at Bach's Cactus Nursery and continues to propagate plants. Some of his favorites are Astrophytum, Copiapoa and Ferocactus plus many others.

The book, "Hens and Chicks The Vitko Collection" is being offered for sale at the special price of \$16.95 (Regular Retail \$19.95). If anyone would like to order the book online, it can be purchased (free shipping in the U.S.) at Memories Forever: mfphoto.homestead.com/TCSS.html

Please be sure to come and enjoy this special program with Don Vitko and have an excellent evening with friends, fun, books, raffle plants, free plants and lots of great refreshments.



Dan Bach and Don Vitko



The International Peace Garden



North America



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

TCSS Program Presentation
Thursday, March 7, 2019 at 7:00pm
Arriving at Symmetry
Presented by Steven Derks

February 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!



President's Message

In this issue of the Desert Breeze, We have printed our financial report for 2018. Please look it over and realize how much your efforts have made it possible for this society to be financially stable. Our Treasurer, Cathy Robson has done an outstanding job managing all our financial transactions. Thank you so much Cathy.

You must drop by Pima Prickly Park and see the 16ft Cephalocereus senilis that we rescued from a mobile home park, then replanted at Pima Prickly Park. It took a real team effort to accomplish this successfully. I thank everyone involved in this effort. But that is not the only great specimen moved to the park. In the last month we rescued several very large organ pipe cacti, large hedgehogs, cereus and more from the old Pima County Court House grounds which will be the site of the January 8th memorial. All these plants have been moved and

are being re-establish in the park. The most interesting project last month was to move an 8ft Opuntia quimilo which had fallen over at a private residence and they asked if we wanted it. Of Course we did. The spines on this plant were up to 6 inches long and presented a real issue. We did have to remove most of the branches but have planted the main stem which should sprout out this spring and summer. We will have lots of rooted cutting for a future sale.

Save October 5, 2019 as the tentative date for the 20th anniversary celebration of the Cactus Rescue Program. It will be held at Pima Prickly Park. You don't want to miss this.

Almost 1,000 members have joined or renewed their membership to date. A second notice will be going out soon as a reminder to those who have not renewed. Last year we had a record 1,350 members. WOW!

Thank you for your support

Dick Wiedhopf, President

Would you like to be on a TCSS Desert Garden Tour?

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Thank you for your consideration. Please contact us with any questions and more details on what is involved when your garden is on one of our tours.

Your TCSS Desert Garden Tour Committee

gardentours@tucsoncactus.org

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Education

John J Ross
Julie Hallbach & Don Featherstone
Walter Barnes & Melvin Laszczynski
Helga Egertson

Conservation

Dick & Pat Wiedhopf
Pima Prickly Park
Julie Hallbach & Don Featherstone
Dick & Pat Wiedhopf
Russ & Chris Freeman
Patsy & Joe Frannea
(In Memory Of Betsy Karsner & Joyce Thomas)

2019 Donors (As Of 1-31-2019)

General Fund
Kathleen Rowland

**2019 Donors
Education**
Ron & Abbe Meyer

Conservation
Yessica Wheeler
Kevin & Ann Peterson

Pima Prickly Park
Ron & Abbe Meyer

General Fund
Mike Cardwell & Denise Garland



Plant Sales before the meeting 6:00pm to 6:50pm

Matthew Lutheran
UA ASLA Student Chapter Treasurer
Master's of Landscape Architecture '19

TCSS Librarian Position

Our current librarian is retiring after years of serving our society.

Please contact
the.president@tucsoncactus.org
if interested.

Thank you.

FROM THE FLORILEGIUM

A bit of housekeeping and some news:

Correction: Please note that the caption for the pen and ink illustration of Burford's holly included in the December "Desert Breeze" should read "Lucretia Breazeale Hamilton - *Ilex cornuta* var. *burfordii* (1975)".

The Gardens of Alcatraz Florilegium

In 2017, the artists of the Northern California Society of Botanical Artists (NCalSBA) completed the Alcatraz Florilegium. This fascinating project that combined history with botanical art was featured in the "Desert Breeze", in October 2014. Here are two ways for you to view the Alcatraz Florilegium.

The NCalSBA website includes a gallery section for viewing each work in the Florilegium:

www.ncalsba.org/alcatraz/gardens-of-alcatraz-florilegium-gallery/

The Alcatraz Florilegium has been published as a catalog to accompany the final exhibit of 127 works that were displayed at Alcatraz in the fall of 2017. The catalog can be viewed here at Flipping Book:

<https://online.flippingbook.com/view/476705/2/>

Out of the Woods: Celebrating Trees in Public Gardens - Exhibit

Exhibits of botanical art are rare in Tucson, so this one from the New York Botanical Garden and the American Society of Botanical Artists (ASBA) is a welcome event. Tucson Botanical Garden (TBG) will host the exhibit from January 26 to April 13, 2019.

In the exhibit are works by forty-four artists that depict trees from botanical gardens and arboreta around the world. Only one of the works depicts a tree native to the Sonoran Desert; Colorado artist Heidi Snyder contributed a painting of a canyon hackberry, *Celtis reticulata*, growing at the Desert Museum. Another work, by local artist Joan McGann, features the non-native *Ficus carica* (edible fig) growing at TBG.

This traveling exhibit began in late 2017 in New York, and has been shown at the Huntington Library in San Marino and the Foundry Art Center in St. Charles, Missouri. After leaving Tucson, it will travel to the Minnesota Landscape Arboretum in Chaska, Minnesota.

If you can't see the exhibit in person, you can find it online at the ASBA's website. Click on "The Art" tab near the top of the web page. <http://www.asba-art.org/exhibitions/out-woods>

"Legumes of Arizona: An Illustrated Flora and Reference"

While we're all eagerly anticipating the publication of this long-awaited book sometime in 2019, we will continue our periodic look at some of the book's illustrations. Here is an illustration of *Dalbergia sissoo*, the Indian rosewood, by Tucson artist Chris Bondante. Note that because this tree is not native to the Sonoran Desert, Chris's illustration is not included in the Sonoran Desert Florilegium.

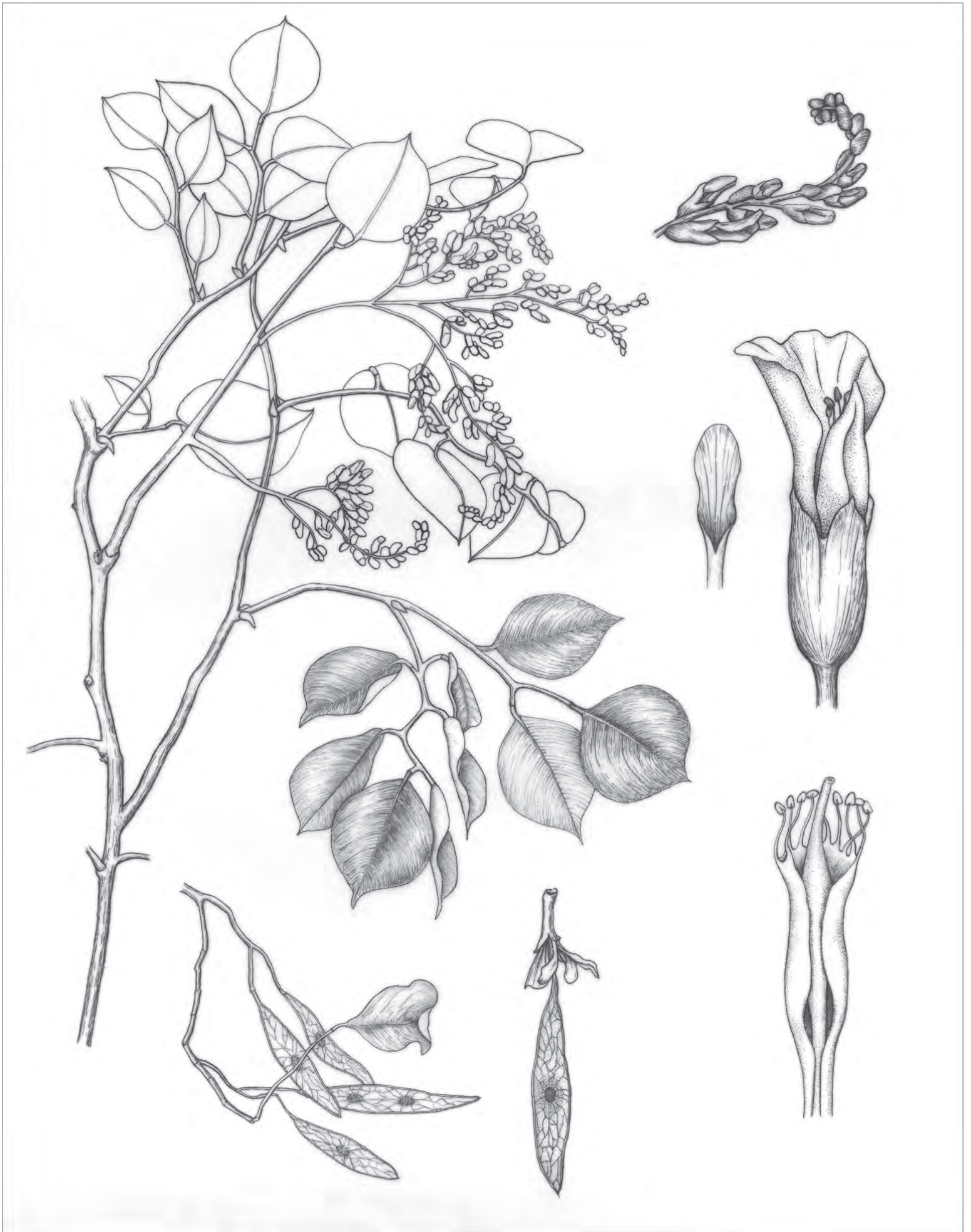
Dalbergia sissoo, also known as sissoo or sisham, is native to plains, low hills, and mountain valleys of the sub-Himalayan region and has been introduced in many dry climates of the world, becoming naturalized in Africa, Australia, and the

United States. Growing to 60', the tree's wide green canopy provides welcome shade, and it has been used widely in tea plantations as a windbreak as well as a shade tree. Its fast growth rate and extensive root system are useful in erosion control, but prolific suckers can create a problem with invasiveness (in Florida, it has been classified as an invasive exotic). In India, the brown heartwood wood of sissoo is second only to teak in value as high quality timber. Like other non-native trees that grow well in Tucson, sissoo thrives in our alkaline soil and is drought tolerant.

Chris's illustration of *Dalbergia sissoo* shows the habit of the plant (at left), a flowering branch with compound leaves, each with 3-5 leaflets. These leaves are pubescent when young, becoming leathery with age. The small flowers at top right form a panicle, or cluster, that can also be seen in the habit. Flowers are yellowish-white and slightly fragrant. An enlarged flower below this cluster illustrates the butterfly-like form typical of the legume subfamily Papilionoideae (see "Desert Breeze" June 2018). Directly beneath the flower is the arrangement of 9 stamens (male) surrounding the pistil (female). To the left of the reproductive structures is the fruit, a flattened pod with intricate venation that can contain 1-4 seeds.

The genus *Dalbergia* was first described by Carl Linnaeus the younger, in *Supplementum Plantarum* (1782), a work of botanical descriptions by the elder Linnaeus with additions by the son. The genus was named to honor the Swedish brothers Carl Gustav Dalberg (1721-1781) and Nicolas Dalberg (1736-1820), both of whom had connections with Linnaeus. Carl Dalberg was a Swedish mercenary in the Dutch colony of Surinam who became, through marriage, one of the wealthiest men in the colony. He returned to Sweden twice with large collections of nature specimens that were given to the King of Sweden and to Linnaeus. Nicolas Dalberg studied medicine in Uppsala University where he also studied with Linnaeus. He traveled throughout Europe with the King of Sweden, making numerous connections in the scientific community. He was twice elected president of the Swedish Academy of Sciences.

If you want to see Indian rosewood up close, the University of Arizona campus is a good place to find them. The Campus Arboretum's website has a list of the sissoos planted there, complete with a handy map for locating each one in their collection (there are a number of them just east of the Tree Ring Research Laboratory): <https://apps.cals.arizona.edu/arboretum/taxon.aspx?id=93>.



Dalbergia sissoo, Indian rosewood, © Chris Bondante, pen and ink

Tucson Cactus & Succulent Society

Profit & Loss

January through December 2018

2018 FINANCIAL ACTIVITY

Beginning Balance January 1, 2018		\$97,663.58
2018 FINANCIAL ACTIVITY		
Income		
20000 · Membership & Meetings Income	\$18,445.66	
22100 · Rescued Cactus Sales income	49,883.76	
23000 · Silent Auct,otherSpecial Income	3,646.95	
23900 · Sonoran Income	55,397.08	
24000 · Special Projects Income	956.00	
24500 · TCSS Field Guide Sales	16,240.70	
25000 · Investment Income	170.99	
26000 · Donation and Gift Incomes	10,542.35	
Total Income	\$155,283.49	
Expense		
40000 · Monthly TCSS Meeting Expenses	\$11,983.85	
41000 · Newsletter Expenses	2,024.97	
42000 · Cactus Rescue Program Expenses	16,504.94	
43000 · Special Events Expenses	4,105.17	
43900 · Sonoran Conference Expenses	54,511.56	
44000 · Special Project Expenses	858.00	
45000 · TCSS Field Guide Expenses	670.66	
51000 · TCSS Operational Expenses	15,818.92	
53000 · Educational Outreach Expenses	2,716.89	
56000 · Conservation Program Expenses	2,500.00	
57000 · Prickly Park Expenses	5,082.24	
57200 · Monrad Cactus Garden	396.32	
Total Expense	\$117,173.52	
NET INCOME:		<u>\$38,109.97</u>
 December 31, 2018 Balance:		 <u>\$135,773.55</u>
 <u>BALANCES</u>		
CHECKING ACCOUNT		\$67,117.97
SAVINGS ACCOUNT		41,713.81
Petty Cash (Cash Boxes)		\$300.00
CERTIFICATE OF DEPOSIT - #18		CLOSED
CERTIFICATE OF DEPOSIT- #19		\$15,035.75
CERTIFICATE OF DEPOSIT - #20		\$11,606.02
 TOTAL TCSS FUNDS:		 <u>\$135,773.55</u>

2018 DONATIONS

AMAZON SMILE	\$22.35
CONSERVATION	825.00
EDUCATION	725.00
FLORILEGIUM	225.00
GENERAL FUND	5,295.00
PIMA PRICKLY PARK	3,210.00
PUBLICATION	40.00
RESEARCH	200.00
	<u>\$10,542.35</u>

TCSS BOARD

Officers

President: Richard Wiedhopf • president@Tucsoncactus.org

Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Monica Wnuk
secretary@tucsoncactus.org

Treasurer: Cathy Robson
treasurer@Tucsoncactus.org

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board@Tucsoncactus.org
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Prickly Park: Linda Heisley • park@Tucsoncactus.org

Programs: Vonn Watkins • programs@Tucsoncactus.org

Refreshments: Patsy Franna • refreshments@Tucsoncactus.org

Technology: technology@Tucsoncactus.org

Research: Doug Rowsell • research@Tucsoncactus.org

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Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, February 21, 2019

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Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

For additional information call: (520) 256-2447

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North Dakota Peace Gardens
presented by Don Vitko

Tuesday, February 12, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. Tucson, AZ

TCSS crew prepares 16-foot *Cephalocereus* for removal from Far Horizons East mobile home park. Steve Watts is on the roof, assisted by (L-R on ground) Vonn Watkins, Dick Wiedhopf, Robert Ellis and Roger Salzgeber (in back)



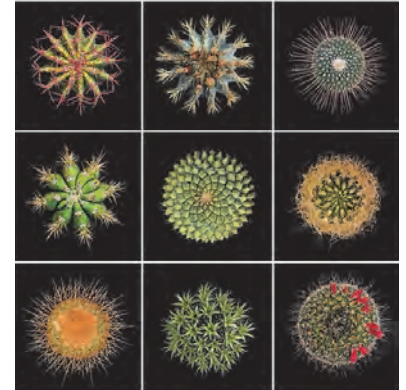
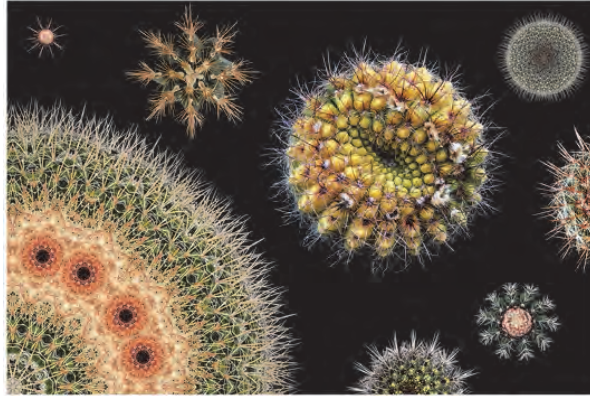


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Newsletter of the Tucson Cactus and Succulent Society

March 2019

Thursday, March 7, 2019 at 7:00pm
Arriving at Symmetry
 Presented by Steven Derks



Throughout the 1980s, I worked as a Native Plant Specialist (cactus cop) for the Arizona Department Of Agriculture. I enforced the Endangered Species Act for threatened, rare and endangered plants in Arizona. This resulted in my appreciation for the aesthetic diversity of cactus and succulents. In 2001 I photographed a saguaro cactus at night from an overhead perspective. After numerous failed attempts, I was able to align the spines of the plant in such a way that its symmetry was revealed. The resulting pattern resembles a snowflake. Recently I began thinking about other structural similarities found in nature. For example, the comparative pattern of a spiral galaxy and a spiral tubercle and spine pattern of a cactus. This interest inspired me to return to photographing cactus with an intent of isolating the plant in black background for the purpose of highlighting its bio-symmetry. I want to make a photo that

illustrates a close-up intimacy with the plant. The paradox in this is that the cactus, by its own spiny nature, defies intimacy. As I processed the images in Photoshop, I discovered that the shadows cast from the textural patterns were of special interest. My curiosity got the best of me and I had to research why the plant produced these shapes. To my delight and surprise, I learned that the shape of then cactus or succulent for all intents and purposes is simply a complex and beautiful water container. The patterns have evolved to allow the plant to regulate its temperature. While editing photos, I continually encountered imperfections. These anomalies could dominate the image based on their ability to disrupt the patterned balance of the image. As a solution I would attempt to repair these portions of the pattern by cutting and pasting selections from other areas of the image. This proved to be a sporadically
Continued on page 1



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

TCSS Program Presentation
Thursday, April 4, 2019 at 7:00pm
 The subject will be: Sansevieria
 Presented by Bob Webb

March Meeting Refreshments

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

effective solution. One day in a fit of frustration while attempting to repair particularly stubborn area of a photo, I resorted to a radical solution. I cut the subject in half, then I discarded the bad half and copied and pasted the good half mirroring the other side. The result was much more natural looking than I anticipated. I began to wonder about the perception of symmetry, in particular something I read that indicated humans prefer slight asymmetry in faces. To study

this, I started to pay attention to the reactions of images I received from the samples I posted on social media. So far my findings indicate that people prefer the (Spherical Symmetry) reconstructed images over the natural images. Now as I make editing choices, I keep in mind these three basic forms of symmetry.....

- Radial symmetry: The organism looks like a pie. ... Rotational symmetry, also known as radial symmetry in biology, is the property a shape has when it looks the same after some rotation by a partial turn. An object's degree of rotational symmetry is the number of distinct orientations in which it looks the same.
- Bilateral symmetry: There is an axis; on both sides of the axis the organism looks roughly the same.
- Spherical symmetry: If the organism is cut through its center, the resulting parts look the same.

Another major consideration when editing cactus is emphasizing patterns keeping in mind the Golden Ratio. This is a common mathematical ratio found in nature that can be used to create pleasing, natural looking compositions in design work. We call it the Golden Ratio. Biologists, artists, musicians, historians, architects, psychologists, and even mystics have pondered and debated the basis of its ubiquity and appeal. In fact, it is probably fair to say that the Golden Ratio has inspired

thinkers of all disciplines like no other number in the history of mathematics. Although I don't understand the math, I can appreciate the aesthetic choices I'm obliged to sacred universal patterns used in the design of everything in our reality, most often seen in sacred architecture and sacred art. With these concepts in mind I continue to experiment with the geometry of these plants. As I developed my methods of exaggerating the symmetry I realized that they were essentially " Digital hybrids" of the original natural composition. The cactus in particular, seem intrinsically suited to bridge natural selection and modern design. Cacti are so remarkable in their symmetry that it is difficult to believe they are living things. I'm endlessly fascinated by these expressions of nature.

Steven was born in Dubuque, Iowa in 1957. He is a practicing full-time self taught artist focusing primarily in metal sculpture with an emphasis on as is found object art, and a minor practice in non-objective painting and photography. His work can be found in numerous public, corporate, museum and private art collections both in the United States and abroad. Notably a six year exhibition in the oval office / white house during the Clinton administration, and an ongoing residency exhibit at the University of Arizona Bio 2 in Oracle Az. He is currently represented by eight commercial art galleries and four private and corporate art consulting companies. He maintains a prolific studio practice that is influenced by such artists a Jim Dine and Sir Anthony Caro. Steven is currently working in Tucson, Arizona. Steven G. Derks, 801 N. Main Ave., Tucson , Arizona 85705, 520.370.1610 www.stevenderks.com

Please come and enjoy a special program that will truly open your eyes to looking at cacti. You will enjoy an excellent evening with friends, fun, books, raffle plants, free plant offerings and a large selection of really great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



President's Message

I am sure glad that February is over. Cold, wet, snow but now it's spring. The leaves are popping out on the Ocotillos, wildflowers are blooming it's time to get into the garden and enjoy. You might want to wander over to Pima Prickly Park and see what we have been doing all winter. We are making a lot of progress and have planted hundreds of plants. It will still be several years before the garden is

fully planted and then a decade or more to watch it mature. Come and enjoy!

We will be starting a new feature at our monthly meeting. It is called; "Ask the Expert". Starting in April this newsletter will give you the topic for the expert. If you come to the meeting there will be 3 x 5 cards on which to write your questions. We will pick out the question of general interest and have our expert respond. Since there is limited time, this will be about a 15 minute segment. We hope to expand the responses and put them on our website. Should be interesting.

We are also planning new member orientations. We have grown so much that it is difficult to engage new members in everything we do. This will be by invitation and representatives of committees will explain what they do and how to get involved. There will be several during the years since it is almost impossible to find a date convenient for everyone. If you are new to the Society in the last 6 months or so expect to hear from us.

We will also have at the monthly meetings an additional badge for new members and guests. New members will be goldenrod in color and guest will be magenta. The purpose for this is simple. When you see someone wearing one of these colored badges; say hello; introduce yourself; answer questions; make everyone feel welcome. We have a lot going on at meetings and someone who is new or visiting needs to know how to navigate the process. I know you will help.

Thank you for your support

Dick Wiedhopf, President

Plant Sales before the meeting 6:00pm to 6:50pm

Matthew Lutheran
UA ASLA Student Chapter Treasurer
Master's of Landscape Architecture '19

Spring Plant Sale

Boyce Thompson Arboretum is a 320-acre Arizona State Park located at highway 60 milepost #223 near the historic copper mining town of Superior; just 45 miles due east of Mesa or about 90 minutes drive northeast of Tucson via Oracle Road to highway 79 north to highway 60 east. The sale continues daily during business hours from 8:00 a.m. to 5:00 p.m.

Tohono Chul Spring Plant Sale

Open to the general public on Saturday, March 18 from 9 a.m. to 5 p.m. and Sunday, March 19 from 10 a.m. to 4 p.m. Tohono Chul's Propagation Area, 7211 N. Northern Ave. Event is free to attend. Bring money to buy plants.

Desert Botanical Gardens Spring Plant Sale

1201 N. Galvin Parkway
Phoenix, AZ 85008

SATURDAY, MARCH 16 | General Public 7 a.m. – 5 p.m.

SUNDAY, MARCH 17 | General Public 7 a.m. – 3 p.m.

No admission charge to enter the Spring Plant Sale. Don't let 30,000 plants intimidate you! Our on-site horticulture experts will help you find the perfect cactus, agave or ornamental to plant in your own garden.

FROM THE FLORILEGIUM

“Legumes of Arizona: An Illustrated Flora and Reference” – Publication expected later this year.

One of the non-native plants included in “Legumes of Arizona” is *Acacia salicina*, Australia's willow acacia. Growing to 40', this tall, graceful tree with a willow-like canopy has been planted in many arid regions of the world for its value as a shade tree, screen, windbreak, and soil stabilizer. In our desert, it tolerates heat, poor soil, and dry conditions while providing abundant grey-green foliage that needs little tending—as long as it's allowed to keep its lovely pendulous form. The main landscaping concern is the tree's tendency to blow over if given too much water.

Acacia salicina was first named and described by the British orchidologist John Lindley (1799–1865) in “Three Expeditions into the Interior of Eastern Australia” by Thomas Livingstone Mitchell. This fascinating account of Mitchell's travels in Australia from 1831 to 1836 includes Lindley's botanical descriptions of 77 new species, including the willow acacia.

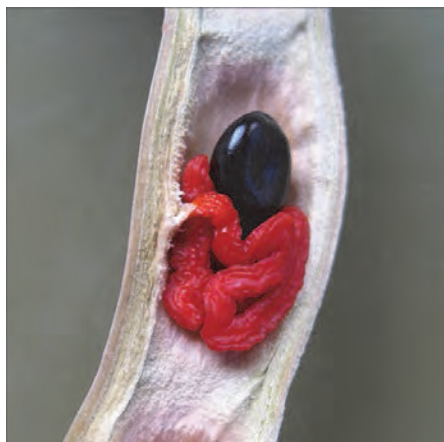
The name of the genus *Acacia* is taken from the Greek word *akis*, or “sharp point”, a reference to the many acacia species bearing thorns. It was first used, in 1754, by the Scottish botanist Philip Miller and later applied by Linnaeus to the African gum arabic tree, *Acacia nilotica*. The species name “salicina” is based on the Latin word “salix”, or willow.

Willow acacia is now classified in the legume subfamily Caesalpinioideae, the peacock flower family. Not too long ago it was in the subfamily Mimosoideae, and its flowers resemble those of the mimosa and fairy duster, with very prominent, long stamens.

The illustration here of *Acacia salicina* is by Chris Bondante, whose drawing of *Dalbergia sissoo*, another non-native legume tree, was included in last month's “Desert Breeze”. The top half of the drawing shows the habit of the plant, a branch with both seed pods and flowers. The flat leaf-like structures on the branch are called phyllodes, which are expanded and flattened petioles that function as leaves. As a seedling, willow acacia has true leaves growing from the petiole, but these soon drop off, leaving the phyllode to serve as a leaf. Phyllodes are common among the Australian acacias.



Acacia salicina, Willow acacia
© Chris Bondante, pen and ink



Seed pod with seed and aril,
© Chris Bondante

In the bottom half of Chris's drawing are three floral structures: an inflorescence with several globular flower heads, a single flower head containing 15-25 pale yellow to white flowers, and, at far right, a greatly enlarged mimosa-type flower with numerous stamens that extend beyond the petals, or corolla.

At the far left of the illustration is an open seed pod that contains a very interesting structure. Note that the black seeds are surrounded by folded fleshy outgrowths. This is an aril, a sort of umbilical-like appendage that attaches the seed to the pod and helps in seed dispersal. In the case of willow acacia, the aril is a brilliant scarlet color that is attractive to birds who in turn eat the seed. Chris's photo of the seed shows the beautiful red color of the aril.

If you're wondering why *Acacia salicina* remains in the genus *Acacia* while our marvelous catclaw acacia must now be called *Senegalia greggii* and our whitethorn acacia has become *Vachellia constricta*, it's because, in 2011, the Australian acacias emerged victorious from the Acacia Wars that roiled the world of botanical taxonomy for several years. The acacias in Australia got to keep their name, and acacias elsewhere in the world got new ones.

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Field Guide Sales: Susan Durham & John Durham
books@tucsoncactus .org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, March 28, 2019

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.

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Cacti Rescued - Since 1999
416 Rescues - 32,866 Volunteer Hours (updated 12/22/18)

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.

March 2019

Thursday, March 7, 2019 at 7:00pm

Arriving at Symmetry
presented by Steven Derks

Tuesday, March 12, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. 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.

Education

David Bishop
Charla Dain

William Mccourt
Joy Phoenix
Leslie Daggy

Conservation

Thomas Pringle

Pima Prickly Park

Kenneth & Ellen Perkins
Martha Burgess
Rod Mondt

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Lynn Andrews
Michael & Sally Mayersohn
Kurt Pohlman
Don & Kim Vitko
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DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

April 2019

Thursday, April 4, 2019 at 7:00pm

The International Sansevieria Society Comes to Tucson and the TCSS

Presented by Dr. Robert H. Webb

Dr. Robert H. Webb is a retired hydrologist who owns and manages Arid Lands Greenhouses in Tucson. Among the many species of succulent plants that he grows and loves, Sansevierias are around the top. He has described or is in the process of describing 9 new species or subspecies of Sansevieria. Alan Myklebust and Webb are the chairmen and editors of the International Sansevieria Society, a small specialty organization now based in Tucson and affiliated with the Tucson Cactus and Succulent Society. Their flagship publication, *Sansevieria*, just released issue 39. This talk, not surprisingly, is about Sansevierias, the diversity of form and size of the existing species (about 80) and discussion of the new ones being found in Africa.

This will be an excellent presentation that everyone will really enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



Flower photo: new species, *Sansevieria rugosifolia*



A potentially undescribed species from Kilaguni Lodge, Kenya



Unusual species: *Sansevieria francisii*



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

TCSS Program Presentation
Thursday, May 2, 2019 at 7:00pm
 The Three Great Chihuahuan Desert Parks of Texas
 Presented by Gary Nored

April Meeting Refreshments

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



President's Message

On February 15, 2019 a new set of postage stamps were issued featuring 10 cactus photographs by John P. Schaefer, member and former president of the University of Arizona. We were able to obtain two different first day of issue packages of 10 envelopes that will be on sale at our meeting. The price will be \$25.00 and \$15.00 for each package of ten. We only have a few so first come first served.

Our new Librarian, Brad Haeckel, takes over at the April meeting. He can be reached at librarian@tucsoncactus.org. If you have suggestion about the library or any new books or journals that should be added Brad would like to hear about it. We are also planning a seed library where seed will be available to all members and members are encourage to donate identified seeds. This should be really fun. A library is important and we have the resources to make ours one of the best sources for Cacti and Succulent information for all ages. That means we will have books that can be checked out for your children and grandchildren. The barcode on your badge is used by the library for checking out material. The Library is available before the meeting and at the break but closes at the end of the meeting.

We are inaugurating "Ask an Expert" at the April meeting. The topic will be about bringing you Adeniums out of dormancy and what to do, when to fertilize, repot, trim etc. There will be 3 x 5 cards at the sign in table to write your questions on and submit. Some of these will be asked in this 15 minute segment near the beginning of the meeting. I hope this works out and would like your feedback on topics for other meetings.

Remember to introduce yourself to new members (goldenrod tags) and guest (magenta tags). It was successful at the last meeting and we want everyone to feel welcome. Thanks for participating.

We hope you will participate in AZgives and tell your friends how they can help support all the things we do.

Finally, we hope to have some of the SARSEF winners at the meeting presenting their research projects. This is so very special and I know how much we enjoyed last year's winners. Getting up in front of 200 adults is tough to do and we need to support these young people.

We are now at 1,130 members.

Thank you for your support

Dick Wiedhopf, President

AZ Gives Day

April 2, 2019

Tucson Cactus and Succulent Society has joined along with many other non-profit organizations to participate in AZgives.org; an organization where small non-profits inform the public of their purposes and contributions to the community. A one-day fund raising event will occur April 2, 2019 and continue throughout the year.

This is an opportunity to raise money to support our society. The Board of Directors will designate one or two projects

where these funds will be allocated. This is the first time we have participated and really hope it is successful

The process is simple. Go to AZgives.org and type in our full name. Our logo and a brief description about the society comes up and at the bottom there is a button that says "Donate". Click on it and follow the directions that come up. We thank you for your support and hope that you will tell your friends to do the same.

28th Annual Desert Horticulture Conference

JW Marriott Starr Pass Resort • Friday, May 31, 2019

A number of our members will be making presentation at this conference and we do want to support them. There is a special price if 3 or more members attend and register before May 10, 2019. The price is \$95.00/person otherwise it is \$105 until May 10.

Please contact me at opuntia@comcast.net if you are interested.

More information about the conference can be found at: <http://cals.arizona.edu/deserthort/>

Note from the Editor

All articles for the May newsletter need to be submitted to me no later than **Wednesday, April 17.**

Thank you,
Karen

FROM THE FLORILEGIUM

Exhibit reminder: The exhibit “Out of the Woods: Celebrating Trees in Public Gardens” will be at the Tucson Botanical Garden (TBG) only until April 13, 2019. This exhibit of botanical art depicts trees from botanical gardens and arboreta around the world, including a painting of a canyon hackberry, *Celtis reticulata*, from the Desert Museum and a drawing of a non-native *Ficus carica* (edible fig) that grows at TBG.

If you can't see the exhibit in person, you can find it online at the website of the American Society of Botanical Artists. Click on “The Art” tab near the top of the web page. <http://www.asba-art.org/exhibitions/out-woods>

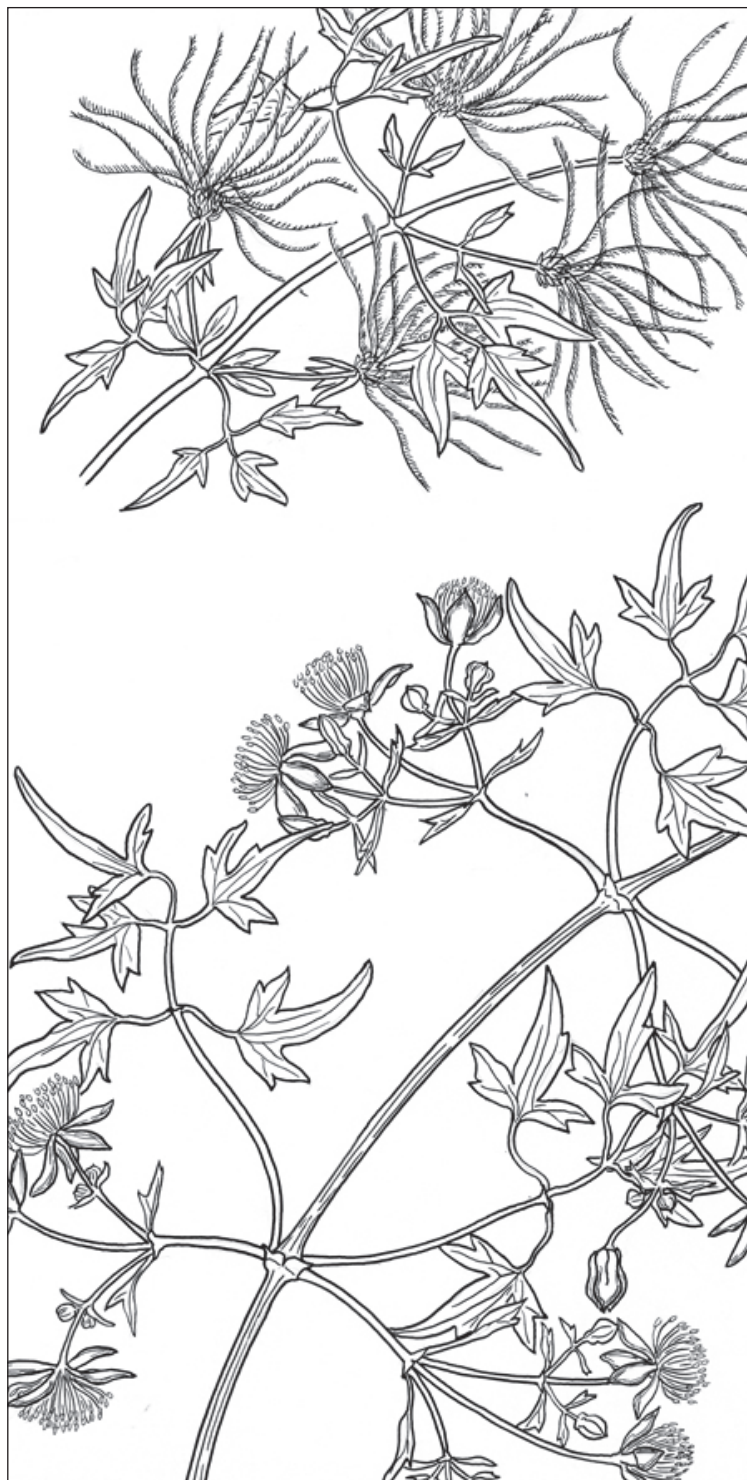
Another dive into the illustration collection at the University of Arizona Herbarium: In addition to the many botanical drawings by Lucretia Hamilton, this collection also includes 450 pen and ink works by artist Evelyn Thornber, the niece of John James Thornber, UA biology professor and botanist for the Agricultural Experiment Station from 1901 to 1942. Cactus lovers may be familiar with Professor Thornber's 1932 work “The Fantastic Clan – The Cactus Family”, which he co-authored with Frances Bonker. The book contains a few watercolor paintings by Ella Howard Estill and drawings of several prickly pears and chollas by Evelyn Thornber. (The UA Herbarium's collection also includes nearly 600 watercolors by Estill.)

Ms. Thornber used a style in her drawings that is simpler than Hamilton's. These are basically straightforward line drawings that are useful for clearly showing the structures of the plant with no frills. None of the pen and ink techniques used to create three-dimensional form are used in these drawings.

One of the more intricate drawings in the Thornber collection is of *Clematis drummondii*, the desert clematis or old man's beard. This is a tough, fibrous vine with slightly fuzzy, bright green leaves that can be found in canyons and washes from southern California to southern Texas and into Mexico. The vine has no actual tendrils for climbing, but the leaf petioles are modified to do the work of tendrils, allowing the plant to climb or trail to 30'.

Desert clematis is a dioecious plant. In Thornber's illustration, the female fruiting plant is shown at the top of the page with the male flowering plant below. The numerous stamens and styles of the flowers are a greenish white, with four pale yellow sepals (no petals) at the base of each flower. The fruit of the female plant is a small dry seed, or achene, attached to a delicate silky white plume that becomes feathery as it matures. These fruits can be seen in the top drawing, but the female flower itself is not represented. Once these fruits become airborne, they can be a formidable opponent in the garden.

Clematis drummondii was named to honor the Scottish botanist and plant collector Thomas Drummond (c.1790–1835). In 1825, Drummond made his first extended collecting trip as assistant naturalist on the second arctic expedition of Sir John Franklin (whose third arctic voyage resulted in the tragic loss of the entire crew of the *Erebus* and *Terror*). Drummond's collections in Canada were given to the botanist Sir William Jackson Hooker who, in 1830, funded Drummond's excursion to the United States, where he collected primarily in Louisiana and Texas. In spite of constant ill health during his travels, he



Clematis drummondii, © Evelyn Thornber

continued on to Florida and Cuba for further collecting. The exact circumstances of Drummond's death in Havana are not known, other than that he died from a fever, in 1835.

Several of Evelyn Thornber's illustrations of plants can be seen on the Florilegium Program's website (www.art-botanical.org). A link is on the home page. The TCSS website has a PDF file of several of Thornber's drawings of cacti that were compiled by Margaret Pope into a coloring book for the Florilegium Program's 2013 exhibit “Botanical Art of the Sonoran Desert”. https://www.tucsoncactus.org/pdf_files/STEM/Botanical%20Drawing.pdf

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Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, April 18, 2019

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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.**

9 2 1 8 5
4

Cacti Rescued - Since 1999
416 Rescues - 32,866 Volunteer Hours (updated 12/22/18)

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

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April 2019

Thursday, April 4, 2019 at 7:00pm

The International Sansevieria Society Comes to Tucson and the TCSS presented by Dr. Robert H. Webb

Tuesday, April 9, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at 1510 E Grant Rd. Tucson, AZ



*New species:
Sansevieria encheiridifolia*

Another photo by Bob Web from his article The International Sansevieria Society Comes to Tucson and the TCSS

Acknowledgement Of Contributions

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Richard Di Russo
Michal Glines & Michael Racy



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

May 2019

Thursday, May 2, 2019 at 7:00pm

The Northern Chihuahuan Desert and its Texas Parks

Presented by Gary Nored, Volunteer at Big Bend Ranch State Park

This program will consist of three parts. In the first part Gary will introduce this ecoregion and clarify the many ways in which it differs from the Sonoran desert (and others). He will discuss the climate and a bit of the geology and how it affects plant life and visitation. In the second part he introduces the three largest parks in this ecoregion and offers a few suggestions about what to see and do in each of them. Finally, he will discuss the Big Bend Ranch State park where he currently works, and suggest places to find different species. He will have photos of each of the cacti families that appear in this area. There are just over 50 slides and he hopes to keep the presentation to under an hour.

Gary Nored is a full-time volunteer for the Big Bend Ranch State Park in Texas. He is the unofficial official photographer for the park and is currently living at the Barton Warnock Educational Center near Lajitas, Texas where he is also working on the interpretive gardens on the site. A lifelong writer, teacher, and photographer, Gary has dreamed of volunteering at the ranch since it opened 20 years ago. After 3 years as a volunteer at the Chihuahuan Desert Research Center, he moved to the Bofecillos mountains at Saucedo where he photographed and wrote about the area for 5 years. Today he is exploring the southern parts of the park. Gary wrote two books for the park. One, the Guide to Campsites of the Big Bend Ranch State Park has enjoyed wide public acceptance and appreciation. The second book, Guide to the Main Road at Big Bend Ranch State Park is currently in production. He is now working on a new chapter for the Texas Master Naturalists training manual.

This will be a wonderful presentation that everyone will truly enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



Continued on page 1



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

TCSS Program Presentation

Thursday, June 6, 2019 at 7:00pm

All Hail the Queen: rescuing the *Peniocereus greggii*
var. *transmontanus*

Presented by Jessie Byrd

May Meeting Refreshments

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



President's Message

Summer is just around the corner. Now is the time to do those last plantings and get ready for the hot and dry weather. The transition always takes its toll since it is easy to forget how quickly plants will sunburn and all the special winter care is gone in a day. It's almost time to change watering schedules. I am telling you this because every year I make those same mistake and wonder why I didn't

remember what I should have done. I do know why! Too many plants and not enough time.

I really need your help with the "ask an expert" topics. April was our first attempt and Mark Dimmitt did a great job answering question about awakening Adeniums. What do you want to know? I am sure there are many other who have the same questions. We want to be able to provide you with answers.

Have you used our library? Why not? How can we make it serve you better? We are trying to initiate a "seed library" as part of the whole concept. We plan to make cactus and succulent seeds available and encourage growing plants from seed and also collecting seeds and donating them to the Library. Sounds like fun! We also want to expand our collection of books and journals so your preferences are important. Let us know

The Pima County Native Plant Nursery and TCSS have created a program for (at present) one volunteer who will do a summer internship at the Nursery and TCSS will provide a \$2,000 scholarship payment to the school of their choice. Jessie Byrd, manager of the Pima County Native Plant Nursery will supervise the student. Jessie and other NPN professional staff will provide "real world" experiences to support conservation and horticultural education. With the interactions and feedback, the student will experience problem solving in a professional nursery. We are very excited about the opportunity.

This reminds me that Pima Prickly Park is always looking for you to volunteer for a couple of hours a week. We just planted 105 *Peniocereus greggii* (queen of the night) in the park. We hope to have a spectacular bloom in June. We will keep everyone posted on blooming nights.

Please contact me with any ideas of issues. It's easy. Just e-mail president@tucsoncactus.org and in fact you can contact any officer by just using their title@tucsoncactus.org.

TCSS is now at 1,159 members.

Thank you for your support

Dick Wiedhopf, President

Arizona Gives Day April 4, 2019

This is a special program for non-profits. It provides an opportunity for everyone to support our efforts. This was our first year of participation and I want to thank Peter Ertman and Cathy Robson for doing all the background work to get us online to receive donations. It was successful for this first attempt. Donors had the choice to support Pitayal Reserve, a new entrance Ramada at Pima Prickly Park and the general fund.

General Fund \$135
PPP Ramada \$1,500
Pitayal Reserve \$710

This was excellent for 10 donors who participated.

Special Thanks To:

2 anonymous donors
Bruce Plenk
Peggy Jo Wahlke
Jocelyne Rivers
Donna Ellis
Richard Wiedhopf
Linda Heisley
Mark Dimmitt
Cathy Robson

Tucson Valley Saguaro Bloom **2019** – Situation Report

Following the most recent bloom years of **2016-18** that have exhibited relatively mild winters and warm conditions over those of other years of the recent decades, the **2019** saguaro bloom season in the “Tucson Valley sub-region” of southeastern Arizona(TVs-r) has, thus far, developed much closer to its average date and even *later* than average in many areas of the sub-region.

This puts the present season in great contrast to those recent blooms.

For instance, in **2018** many areas of the TVs-r were reporting statistically significant blooming within the first 10 days of **April** while this year the general appearance of buds only began during the second week of **April**(Tuesday through Thursday-the **9th-11th** of **April**). In addition, last year the saguaro blooming began abruptly with large portions of a given areas saguaros beginning their blooming over a short period of time while this year the initiation of blooming can only be described as “thready” at best – where many of the cacti have many to most of their stems to be, even at this relatively late date, still without buds and/ or the view-scape around a given cactus with buds will show many to most of its neighbors are without buds.

One needs to place in its proper significance the visual “bias” that tends to emplace itself in our thoughts as representing the beginning of blooming when year after year those cacti that are reported to be blooming are several “sigmas” beyond/ earlier than that of the area saguaros populations median and/ or mean starting dates!

Last year because of protracted and prevailing poor growth conditions for the sub-regions prickly pear cacti populations few new stem growths and few flowers were produced. This state encouraged the concentration of the “Leaf-footed Cactus” bugs(N. f.) herbivory upon many saguaros during the entire **2018 bloom** and often resulted in the loss of most of those saguaros initial two cohorts of buds. This year the prickly pears of the sub-region seem to be in fine fettle following the record rejuvenating rains of **October 2018**. The prickly pears of the area seem to have rebounded as they can be seen to have many new stem growths and cladodes lined with flower buds. Hopefully the attentions of many of the N. f. will be diverted from the saguaros this year by this bounty!

During **2018** on the Red Hills Saguaro Plot(RHSP) up at just over **3.500ft.** near the east end of the Rincon Valley in east central Pima County, Arizona the first saguaro flower bud showed up on **03 April** while this year the initial buds erupted late in the **2nd week** of **April** to early in the **3rd week** of **April** – 8 to 13 days later!

The first cohort of saguaro buds this year does not appear to abnormal in size or to have received much foraging by the true bugs.....yet!

I'm looking forward to a very interesting **2019** Season ----- *Bill Peachey* **19 April 2019**

54th ANNUAL SHOW AND SALE CACTUS AND SUCCULENT SOCIETY OF AMERICA HUNTINGTON LIBRARY & BOTANICAL GARDENS

Dates: Friday, Saturday & Sunday, June 28-30, 2019

Location: The Huntington: 1151 Oxford Drive, San Marino, CA
The Botanical Center. Contact 626-405-3504

Sale Hours: Sale: Friday, Saturday & Sunday 10:00am-5:00pm

Show: Saturday & Sunday 10:00am-5:00pm

Show Set-up: Thurs. June 27th 9am-1pm

Enter Plants: Thurs., June 27th 1pm-8pm & Friday, June 28, 10:00am-4:00pm.

Judging starts at 5:00pm Friday

Auction: Saturday, June 29 at 7:00PM. Items need to be registered by 3PM
There will be a Silent Auction during dinner and a Live Auction (35 items max.) after dinner. Auctioneers will decide placement of items: 2 items per person/business marked as donation or split (70/30)

Dinner: Saturday, June 29 at 6PM \$15.00 Menu: Chili Buffet.

Mail checks, made out to CSSA, to Bonnie Ikemura – 8400 Bleriot Ave. Los Angeles, CA, 90045; Reserve spot by Phone: 213-305-1421 or email Bonnie at bikemura@hotmail.com. Reservations must be made by June 26, 2019

Teardown: Sunday, June 30, 5:00pm

Be sure to pick up a Show Schedule, Index and entry tags from your CSSA Club Affiliate at your May & June club meetings, if you are interested in entering plants in the Show or in the Auction.

All Cactus & Succulent Club members, CSSA members, vendors, volunteers or show participants need to wear their club badges (if you have one) AND a special CSSA/HBG pass that reads “ Annual CSSA Show Participant” to enter the HBG for free. If you are a HBG member this doesn’t apply. Please obtain a pass from your CSSA Affiliate at your club meeting or contact Barbara Hall, Show Chair before the event. We are not permitted to hand out passes at the HBG entryway.

There are opportunities to participate/volunteer in this year’s show, even for a couple of hours in the showroom or sales areas, hospitality (food) area, information table, holding area, welcome table at the HBG entry & setup/teardown. All participants receive a show T-Shirt as a thank you.

See you at the Show!

Barbara Hall

CSSA Show Chair

Email: lbcjhall@aol.com Phone: 818-368-6914

FROM THE FLORILEGIUM

The variety of previously unknown plants collected during the United States–Mexican Boundary Survey (1848–1855) often astonished the expedition’s botanists and naturalists. The variety in size alone was remarkable, from the enormous, awe-inspiring saguaro to a minute parasitic flower that confounded the naturalists because of its improbable growth habit. George Thurber, one of the expedition’s botanists, discovered this tiny flower, *Pilostyles thurberi*, growing directly out of the stems of *Psorothamnus emoryi*, an indigo bush, near the Gila River, in June 1850.

In a biographical account of Thurber’s life, H. H. Rusby noted: “It was upon this expedition that Dr. Thurber discovered the curious *Pilostyles*, which he at once recognized as something very curious, and which he subsequently accurately classified, insisting upon his determination in the face of the persistent incredulity of both [John] Torrey and [Asa] Gray, until his earnestness led them to an investigation and confirmation.”

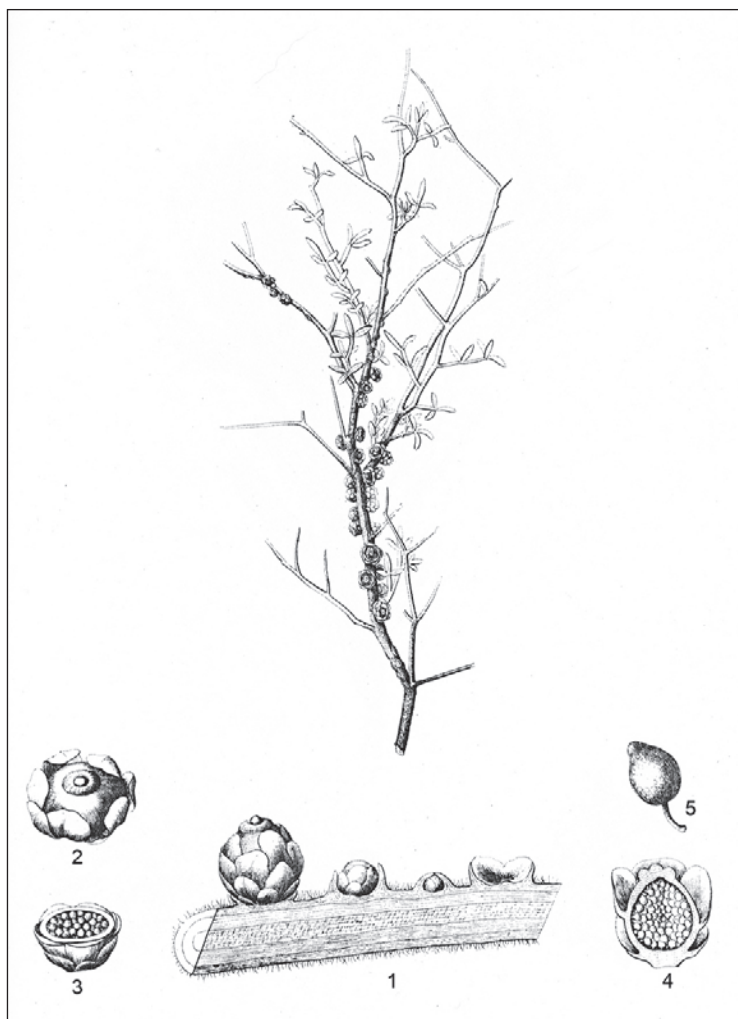
Unlike other parasitic plants in our desert, *Pilostyles thurberi* (as the plant was named by Gray in “*Plantae Novae Thurberianae*”) is an endoparasite, living inside the host’s stems and invisible for most of the year. Only when it flowers does the plant push through the stems and become noticeable. What Thurber saw growing on the host indigo bush would have looked very much like an infestation of reddish scale insects clustered on the branches.

The cup-shaped maroon flowers are about 2 millimeters wide and are the only part of the plant that ever becomes visible, erupting through the host’s stems and branches in order to bloom. The cup holding the reproductive structures of the flower is formed by a ring of bracts that enclose two whorls of sepals. Flowers persist for a year or longer after maturity, eventually falling off the host and leaving behind a pitted surface on the stems.

The plant is shown here in an illustration from John Torrey’s “*Botany of the Boundary*” from the final Boundary Survey report. In the center of the drawing is a branch of *Psorothamnus emoryi* covered in the small round flowers of *Pilostyles thurberi*. Directly below this is a longitudinal section of a single stem (Fig. 1), greatly enlarged, showing the parasite’s flowers emerging from the host and the empty depression where a previous year’s flower had emerged. Fig. 2 is an enlarged single flower. A horizontal section (Fig. 3) is below the flower, and a longitudinal section (Fig. 4) is on the right, with both sections showing the ovules, one of which is enlarged in Fig. 5.

The name of the genus *Pilostyles* is taken from the Latin *pilus*, meaning “hair”, and *stylus*, or “pillar”. This “hairy pillar” refers to the reproductive structure at the center of the flower—a fleshy column topped by a disk that is present in both male and female flowers.

There is still some uncertainty about the plant’s pollinators and eventual seed dispersal and germination. Because the flowers are so inconspicuous, the plant relies on scent to attract pollinators. A 2014 study of *Pilostyles thurberi* on two species of *Dalea* in Texas found that its flowers emit a strong raspberry fragrance attractive to bees and wasps. Ants may also play a role in pollinating the flowers and in later dispersing the sticky seeds. Like our desert mistletoe, these sticky seeds



Pilostyles thurberi, Thurber’s stemsucker, Illustrator uncredited
The Report on the United States and Mexican Boundary Survey 1859

may attach themselves directly to a stem and enter the plant’s tissues from there. Another possibility is that the seeds end up on the soil near the plant and invade the plant through the base of the main stem.

Pilostyles thurberi can be found in southeast California, southwest Arizona, southern Nevada, New Mexico, Texas, and Mexico. Currently there are nineteen species of *Pilostyles* occurring in the Americas and also in Africa, Iran, and Australia. The favored hosts for the entire genus *Pilostyles* are plants of the legume family.

You can view an enlarged version of this illustration on the Florilegium Program’s website where we also have links to a number of excellent photographs of this most unusual little flower. The link is on our homepage (www.art-botanical.org).

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secretary@tucsoncactus.org

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treasurer@Tucsoncactus.org

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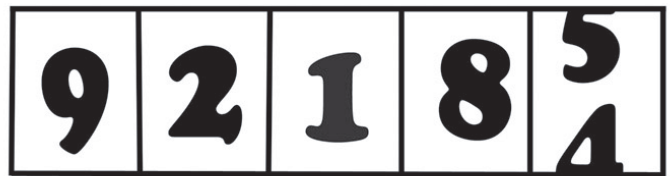
Deadline for newsletter text or photos:
Thursday, May 23, 2019

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
416 Rescues - 32,866 Volunteer Hours (updated 12/22/18)

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 2019

Thursday, May 2, 2019 at 7:00pm

The Northern Chihuahuan Desert and its Texas Parks presented by Gary Nored, Volunteer at Big Bend Ranch State Park

Tuesday, May 14, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at 1510 E Grant Rd. Tucson, AZ

TCSS has a long rich history, we've almost hit the 60 year mark. In an effort to track that history we will be conducting oral histories of members and TCSS partners. These accounts will be archived in the TCSS library and available to all members.

This will be a long term project that I will happily supervise but I will definitely need some assistance. If members have any experience with the process of obtaining oral histories or would like to participate in the process please contact me at: tstaudt2@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.

General Fund
Richard Di Russo
Michal Glines & Michael Racy



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

June 2019

Thursday, June 6, 2019 at 7:00pm

All Hail the Queen: Rescuing the *Peniocereus greggii* var. *transmontanus*

Presented by Jessie Byrd

Peniocereus greggii has a lifestyle strategy unique from most cactus in the Tucson area that makes rescuing this plant from development sites a special challenge. Learn how to spot the plants in habitat, the correct approach to digging and how to care for wild plants in cultivation.

Jessie Byrd is the Native Plant Nursery Manager for Pima County Natural Resources, Parks and Recreation, which specializes in growing and salvaging native plant species for public projects. Jessie believes that using native plants in urban landscapes can help encourage biodiversity while also significantly reducing long-term maintenance inputs. She earned a Master of Landscape Architecture from the University of Arizona and a BA in Biology from Bryn Mawr College. She is the president of the Tucson Chapter of the Arizona Native Plant Society and Tucson Cactus and Succulent Society board member.

This will be an excellent presentation that everyone will enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.



TCSS Program Presentation

Thursday, July 11, 2019 at 7:00pm

Chemicals from Cacti and Other Succulents

Presented by Dr. Art Friedman



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

June Meeting Refreshments

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



President's Message

Chuck Hanson passed away in May.

I first met Chuck in the 70's. He was the curator of large animals at ASDM but more important he was growing and selling African succulents (Euphorbias, Aloes, Haworthias, Gasterias, all kinds of cactiforms and more) but no cacti. He founded Arid Lands Greenhouses in 1978 and ran it until 2007. He opened a retail shop on Tanque Verde Rd. real close

to where we were moving and that was great. I still have a few plants that I purchased in the early days of that store.

Chuck traveled extensively in Africa, Madagascar and other succulent habitats and used that experience to grow fabulous plants in the Tucson climate. A group of like-minded individuals formed the Xerophyte Society (I think that was the name) that was more plant science than hobbyist. He published a number of articles with members of that group especially on Adeniums.

In the early 1990s, Chuck became a board members of the Cactus and Succulent Society of America (CSSA) and bid for the 1995 Convention to be in Tucson. He convinced most of the Xerophyte Society to join TCCS including changing the name from The Tucson Cactus and Botanical Society to The

Tucson Cactus and Succulent Society. He served as TCSS president from 1993-95. Our paths crossed again with a phone call I received from Chuck urging me to take an active role in this upcoming convention since I was one of the few left from the 1977 CSSA convention in Tucson. I said NO! His response was simple and direct. I will bug you every day until you change your mind. Obviously, he prevailed. His determination was to make the 1995 convention the biggest, most interesting, educational, and profitable that the CSSA had ever had. It was that and more. I could write pages on what his ideas were and how they were carried out by the convention committee. It changed our society forever.

We were so pumped up after the convention that we had to do something and that is how the Sonoran Conference was started. Chuck left his leadership role in TCSS to me as vice-president at the time and also left the CSSA Board. He focused on his nursery business, and a life with his wife Karen. They transitioned to Iowa, Ecuador and Sonoita, Az and he expanded his interests to include cacti, orchids and other strange succulent plants.

Chuck was awarded Fellow status of CSSA which recognized his contributions to the world of Cacti and Succulents.

Thank you for your contributions and support of our hobby.

Dick Wiedhopf, President

Summer Internship

Pima County Native Plant Nursery and The Tucson Cactus and Succulent Society have joined together to provide a summer student internship program. The first intern is Rebecca Johnstone. Rebecca will be completing her Masters of Landscape Architecture at the University of Arizona in this next year. Upon completion of this summer program, TCSS will provide \$2,000 towards Rebecca's tuition.

Jessie Byrd, manager of the Pima County Native Plant Nursery will supervise her. Jessie and other NPN professional staff will provide "real world" experiences to support conservation and horticultural education. With the interactions and feedback, Rebecca will experience problem solving in a professional nursery.

There will also be activities with Pima Prickly Park and we are delighted to have Rebecca as our first intern.

Educational Outreach Coordinator

Below are excerpts from Caryl's resignation letter to the Board. There is no way that we can express our appreciation and congratulation for the outstanding job except to say THANK YOU! I am sure that finding a new coordinator will demonstrate to Caryl how meaningful her contributions to TCSS education are.

"I have had the pleasure of serving the TCSS and Tucson Communities for over a decade. In that time, we have been able to work with Pima County Parks and Recreation, Pima

County School Superintendent's STEMAZing program and a multitude of local and southern Arizona schools.

Our focus in education is education! We endeavor to promote conservation and the basics of cactus life and survival that will inspire students to become curious junior rangers.

Our best loved "lessons" include the Build-a-Cactus kit and for the past several years, our realia O&A table. We have completed over 200 events in these years that include:

- community, classroom and school events
- school garden grants
- SARSEF Science Fair and Innovators Night
- TCSS Novice events

We have engaged the participation of over 50 TCSS members as volunteers. This includes the training and communication to these valued volunteers. There is no question that the program must go on with newly selected leadership. TCSS Educational Outreach Coordinator will strive to meet the ongoing needs of our community.

TCSS President will secure a person for this position. Selection of a new coordinator is your opportunity to look for change and progress for our organization.

Sincerely,

Caryl Jones

FROM THE FLORILEGIUM

Of all the naturalists who traveled with the United States–Mexican Boundary Survey expedition, George Thurber (1821–1890) was the only plant collector to botanize in western Sonora, and the only one to thoroughly explore and collect on the Gila River and the California desert. It was on the Gila River that he collected the previously unknown parasitic flower, *Pilosyles thurberi*, (described in last month’s “Desert Breeze”), and it was in northern Sonora that Thurber found the organ pipe cactus, *Stenocereus thurberi*.

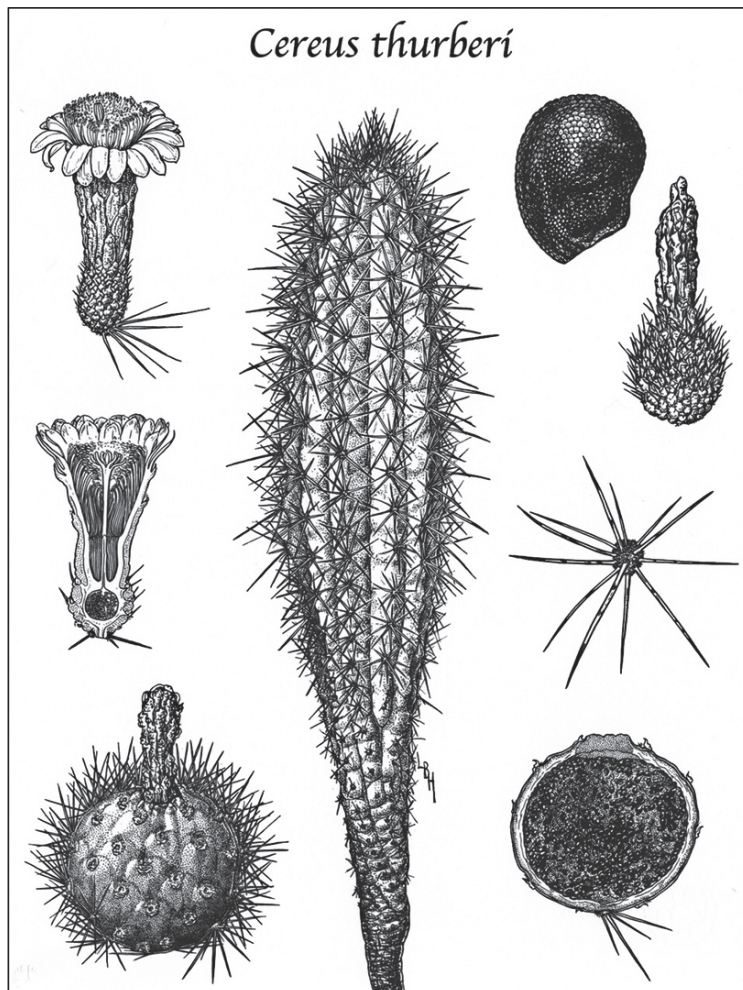
In May of 1851, Thurber’s party, led by the roving Boundary Commissioner John Russell Bartlett (“Desert Breeze” July 2014), passed through a steep canyon between the towns of Bachuachi and Arispe on the Sonora River. Here, in a pass that was “brilliant with the intensely scarlet flowers of a fine *Erythrina*”, they found a new species of *Cereus*, the organ pipe cactus. In 1854, this cactus was described by George Engelmann based solely on Thurber’s field notes and a single flower that he had collected. Engelmann named the cactus *Cereus thurberi*, to honor the collector. After enduring a few cumbersome renamings, the cactus was finally given the name *Stenocereus thurberi* by Franz Buxbaum, in 1961.

The illustration here is a lithograph by Edward Hamilton of a pen and ink drawing by Lucretia Hamilton of *Stenocereus thurberi*. Between 2008 and 2010 Edward Hamilton, Tamarind Master Printer and owner of Hamilton Press in Venice, California, made lithographs of 15 of the drawings that his mother had prepared for Lyman Benson’s *The Cacti of the United States and Canada*. Hamilton hand colored eight of the lithographs and donated a set to the Florilegium Program, in 2012. Hamilton also donated a set of the 15 uncolored lithographs to the University of Arizona Herbarium.

George Thurber’s interest in botany began when he worked as a pharmacist in Providence, R.I. This led him to make the acquaintance of the botanists John Torrey and Asa Gray, and when his interest in studying plants broadened into an ambition for botanical exploration, Torrey and Gray recommended him to serve on the Boundary Survey Commission. He was hired as botanist, quartermaster, and commissary, travelling primarily in the company of Commissioner Bartlett. Thurber amassed an impressive collection of new plants that Gray eagerly published, in 1854, as “*Plantae Novae Thurberinanae*”, knowing that the completion of the final boundary survey report with illustrations of the plants would require several more years (1859).

With his desire for exploration satisfied, Thurber went to New York where he was appointed to the U.S. Assay Office, and a few years later he lectured on botany at the Cooper Union and the New York College of Pharmacy. In 1859, Thurber was hired as professor of botany and horticulture at the Michigan Agricultural College, becoming the country’s first professor of horticulture. Four years later, the Orange Judd Company hired Thurber as editor and contributor for the “*American Agriculturist*”, a Boston periodical that occupied him for the next twenty-two years.

Thurber wrote on a variety of topics for the magazine. His recurring columns included “The Doctor’s Talks”, instructional articles for children on a wide variety of scientific subjects; and “Humbug”, a very popular series intended to debunk the claims



Stenocereus thurberi, Organ pipe cactus

© 2009 Edward Hamilton: lithograph prepared from a pen and ink drawing by Lucretia B. Hamilton, ca. 1982

of hucksters and charlatans, whether medical or agricultural. Near the end of his life, his column “Notes from the Pines” described his life at his home on the Passaic River in New Jersey where he maintained a wild garden and encouraged his readers to do likewise. He made revisions to several important horticultural publications, and, for the Orange Judd Company, he edited and wrote books on horticulture and agriculture.

Graminology was Thurber’s particular field of expertise, and he worked for many years on a monograph of American grasses. Unfortunately, he was unable to complete the project in his lifetime. Upon his death, Charles Sprague Sargent wrote in “*Garden and Forest*” magazine that Thurber had been the most accomplished horticultural writer that America had produced. He continued, “Dr. Thurber was a man of great knowledge and of the broadest sympathies, kind, faithful and true, generous to a fault, simple in the ways of the world, and always more interested in the welfare of others than in advancing his own interests.”

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Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, June 27, 2019

TCSS Web Page:

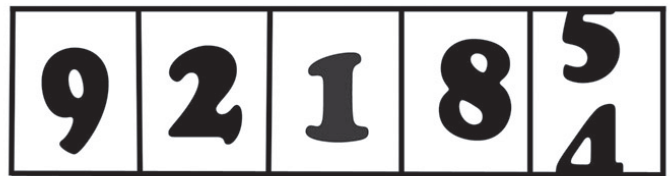
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All Hail the Queen: Rescuing the Peniocereus greggii var. transmontanus
Presented by Jessie Byrd

Tuesday, June 11, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. 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.

Unrestricted General Fund

Noe' Mayotte & Family

Sandi Kilkuts & Family

Pima Prickly Park

William (Wild Bill) & Barbara Pickett

Tereasa Corcoran

July Meeting Announcement

Because the first Thursday is July 4, the actual date for our July meeting will be moved to Thursday, July 11, 2019



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

July 2019

Thursday, July 11, 2019 at 7:00pm

Chemicals from Cacti and Other Succulents

Presented by Dr. Art Friedman



There are an estimated 391,000 known plant species of which fewer than 10,000 are succulents. The number of known chemicals exceeds the number of plants by nearly three orders of magnitude. In this presentation, Dr. Art Friedman will examine a group of cacti and succulents from a chemical perspective, noting which plants contain compounds that are deadly poisons and which ones contain potentially life-saving

drugs, as well as illegal controlled substances.

While no prior knowledge of chemistry is necessary (although it is helpful to have), a short discussion of how to interpret chemical structures will be provided and how these structures can be used to predict biological properties of the compounds in question.

“Dr. Art Friedman is a native of Philadelphia, but has lived and worked in the midwest for over 32 years. Art graduated from

Drexel Institute of Technology with a B.S. in biological science, and after a few years of industrial employment returned to Drexel University where he received an M.S. degree in biochemistry and a Ph.D. in organic chemistry.

Although his career has been primarily devoted to R&D activities in the fields of pharmaceutical, agricultural and environmental chemistry, as well as teaching at both high schools and colleges, Art has also been involved in bringing the joy of chemistry to the masses for over 35 years. He created a program, “The Magic of Chemistry” that was seen by over 30,000 students in four states, and was featured on a nationally syndicated program “PM Magazine”.

Art and his wife Erica, have resided in Tucson since January of 2018. He currently is offering a number of science classes through Pima County’s Special Interest Programs.”

Please come and enjoy knowing about the chemistry of cacti and other succulents. Talk with members and guests, have some fun, check out our library books and be sure to have the great refreshments. Win some plants and also, make it a point to stay until the end of the meeting and get your free plant offered by the TCSS.



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

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

TCSS Program Presentation

Thursday, August 1, 2019 at 7:00pm

Program title undetermined at this time.

Presented by Judy Mielke

July Meeting Refreshments

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



President's Message

I have put on my special glasses to look into the future of TCSS and this is what I see. Over the last decade we have grown and maintained a large membership but it is dependent on the Board and Officers to keep it moving forward. We are a large organization that continues expanding our goals and objectives. What steps do we take to begin to establish a more lasting structure

based on sound management practices? We will not make it complicated, just effective.

Here is just a few of the current conceptual opportunities we are considering. Developing a new xerophytic botanical display at Sky Islands Public High School, where we now meet. This might encompass a substantial area facing 14th street which would give a different look to the public face of the school. It would become a teaching resource for the school, a neighborhood resource and a new environmental appropriate tree canopy for the community. The TCSS would be involved in the development and maintenance of this area. This would meet an objective of the Board which felt that we needed an activity on the east side of Tucson.

We are considering office space for TCSS at the school which would enable us to engage a part time administrator to

handle tasks which are now handled by the officers and board members in addition to the normal designated responsibilities. We might even be able to hold small committee meetings and at least have our files, a computer and printer that would maintain all our important information in one accessible space. It should be enough space to move out of our storage facility and keep all our business forms, books, handouts etc. available in one spot.

Of course we would do this in a manner that would not impact the educational and student activities at the school.

We have important educational and research goals and this administrative center would help the chairperson of those committees be more effective since there would be help for the administrative activities and they could focus on other issues.

Additionally, We have a role to play in climate change since the plants we care about are absolutely affected by short and long term changes in the climate. We need to start collecting data and monitoring changes we observe. This new base of operation would provide us that ability.

I see a bright future for this society and will do all I can to make it happen

Thank you for your support

Dick Wiedhopf, President

The Monsoons are Coming! - Cactus Rescue Sale

**4342 N. 4th Ave (South of Wetmore Road) • Saturday July 13th
7:30am to 9:30 am**

Come out and support Tucson Cactus and Succulent Society Rescue Sale

Come early as numbers are handed out when gate open.

Gates will open at 6:30 am and customer numbers will be handed out on a first come first served basis.

Rescue plant sales will begin at 7:30 am

Rescue plants include:

**Hedgehogs, Barrels, boxes of mammillaria, saguaros, ocotillos,
and some potted plants**

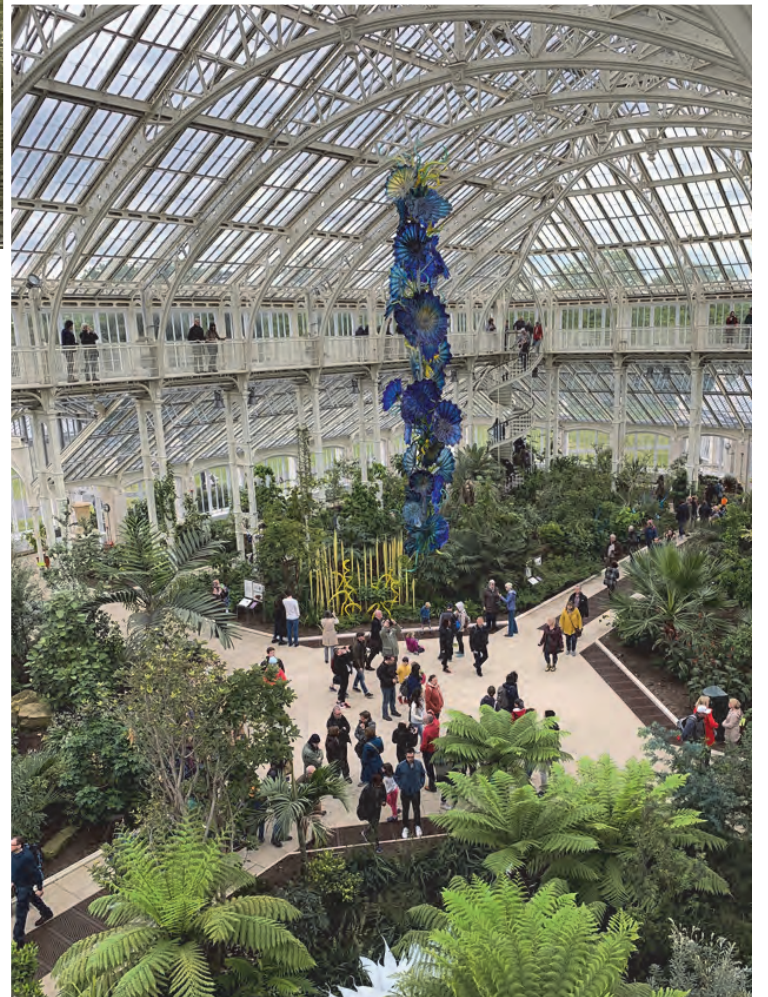
There will probably be per person limits on saguaros and ocotillos during the first 45 minutes of the sale.

Limits will be announced at the sale once we have a final count of available plants.

There are several rescues scheduled before the sale so there will be a large selection for our customers.

To speed up the cashier process please bring your TCSS member number so we can update the tally sheet as we hand them out.

Royal Botanic Gardens, Kew, England



**TCSS BOARD
Officers**

President: Richard Wiedhopf • president@Tucsoncactus.org
Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Monica Wnuk
secretary@tucsoncactus.org

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treasurer@Tucsoncactus.org

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board@Tucsoncactus.org
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Bill Holcombe (2019)

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cactus@Tucsoncactus.org

Education: Caryl Jones • education@Tucsoncactus.org

Free Plants: Donna Ellis • plants@Tucsoncactus.org

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books@tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, July 25, 2019

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.

9 6 2 3 5
4

Cacti Rescued - Since 1999
425 Rescues - 33,600 Volunteer Hours (updated 5/10/19)

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.

July 2019

Thursday, July 11, 2019 at 7:00pm

Chemicals from Cacti and Other Succulents
Presented by Dr. Art Friedman

Tuesday, July 9, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. Tucson, AZ

Saturday, July 13th, 7:30am to 9:30am

Cactus Rescue Sale
4342 N. 4th Ave (South of Wetmore Road)

Friday, Saturday July 26, 27, 2019

Tohono Chul Monsoon Madness Plant Sale.
Friday July 26, 2019 from 3 – 7 p.m.
Saturday July 27, 2019 from 8 a.m. – 1 p.m.
Free Admission to the park during the sale.

Araucaria araucana

Very old monkey puzzle tree at Kew Gardens





DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

August 2019

Thursday, August 1, 2019 at 7:00pm

Saguaros: Inventory, Salvage, and Landscape Use

Presented by Judy Mielke



Cactus grouping

“Saguaros - iconic cacti of the Sonoran Desert - are often in the path of development, whether it be highways, shopping centers, or houses. Fortunately, the majestic plants are protected by state, county, and municipal laws and ordinances. As a result, many saguaros have been salvaged rather than destroyed. Judy’s presentation will cover how to assess plant viability and transplantability during the inventory process. Recent research about salvaging and replanting saguaros will be reviewed. And Judy

will offer guidance on placing saguaros and other cacti and succulents in the landscape, from both a horticultural and aesthetic perspective.”

“Judy Mielke is Senior Landscape Architect at Logan Simpson in Tempe, where she frequently conducts native plant inventories

and prepares landscape restoration plans. Judy is author of the award-winning book “Native Plants for Southwestern Landscapes.” She is originally from eastern Washington, where she grew up on a wheat farm and cattle ranch. After receiving a degree in Horticulture from Washington State University, Judy came to Arizona to pursue her interest in cacti and succulents. She did a summer internship at Desert Botanical Garden and ended up staying on for nine years as a Horticulturist. Judy received her Masters of Environmental Planning from ASU and is a registered landscape architect in Arizona, Utah, and Washington State. She also is a Certified Arborist and a Certified Water Harvesting Practitioner. Judy is an avid home gardener whose interests include wildflowers, cacti and succulents, plants for wildlife, and flowers for cutting.”

This will be a presentation that everyone will enjoy. Please make plans to come and have fun making some new friends, talk with members and guests, visit our library and check out some books! You will truly want to enjoy the great refreshments. You have to also win some of the plants available in our raffle and finally, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.

Photos on the next page



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

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

TCSS Program Presentation Thursday, September 5, 2019 at 7:00pm

Who's Yer Daddy?

The story of Echinocereus x roetteri from the Jarilla Mountains, New Mexico

(With an introduction to introgressive hybridization)

Presented by Jerry Arp

August Meeting Refreshments

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



Gonzo Pass Hwy and Nursery



Saguaro on truck



Saguaro transplant



President's Message

Summer is half over but it seems as if it has lasted forever. Where is the Monsoon?

Don't we say this all the time? Things are just not what they were like 20 years ago. We might as well get used to it and adopt to climate change. This brings me to my first point of interest.

Rebecca Johnston, who is our Pima County Native Plant Nursery Intern, is doing a project at Pima Prickly Park involved with creating berms to catch water either from the hose or sky and assess which xerophytic plant will do well in that situation. We will have her write up her project for a future newsletter. I know this will be of interest to all.

This summer we have been involved in numerous rescues all over Southern Arizona. I want to make sure everyone understands that we are not a political organization. We are a tax exempt 501(c)3 tax exempt organization as recognized by the IRS for the major purpose of education and environmental programs. We save plants from areas that are going to be developed without regard to the development or developer. The rescue program follows all the rules for native plants as established by the State of Arizona. We all appreciate the efforts of Donna and Robert Ellis in making this such an outstanding program. I hope you have been able to attend one of our sales this summer. We have never had so many plants especially Ocotillos. These sales have brought in monies that we use for education, conservation, support of the rescue program and to maintain activities for the more than 1,300 members.

Our next sale will be the BLOOMING BARREL SALE (BBS) on Saturday, August 17, 2019. It was originally scheduled for Sunday but by popular demand and consent of the Board of Directors it has been moved to Saturday. I hope you agree that this is a good decision by the Board. BBS give you an opportunity to buy barrel cactus by flower color if that is important to you. Our native barrel goes from bright yellow to red and everything in between. Oranges are the predominate colors.

Also put on your calendar the Good Time Silent Auction on September 15. This has been an annual event going back to the beginning of the Society. You provide the plants for the silent auction. There is also a free plant area where you can dispose of extra plants and plant related materials. The best part of this afternoon event is the ice cream and all the topping. More information will be in the September newsletter.

We recently, participated in another rescue with TEP. We have partnered with them in saving plants since 2008. A video describing this partnership is being developed for Mrs Green World.com by TEP and will be available in mid-August.

We are in need of some special member help. I am sure there is someone who would like to head up our education program. We also want to update our web site and need a dedicated web developer to work on this and other related activities. Please contact me if you are willing to help.

Thank you as always for your support

Dick Wiedhopf, President

FROM THE FLORILEGIUM

Skilled botanical illustrators in the 19th century were rarely at a loss for employment. One such opportunity was the result of the widespread movement in Europe for compulsory education. This admirable goal greatly increased the number of students without a corresponding increase in teachers, and it wasn't unusual to have more than 100 pupils in a classroom.

One solution for teaching such a large group of children was the *Wandtafeln*, or wallchart, a large poster-sized image that could be seen by students from any point in the classroom. Use of these charts began in Germany in the 1820s where they were used in primary and middle school for instruction in botany, zoology, and anatomy. As the lithographic process had greatly reduced the cost of printing, the charts were usually in full color. Wallcharts remained very popular into the 20th century.

Many of the charts used poster-like graphics while others were fine works of botanical art. One of the latter was the *Atlas der Botanik*, commonly called the Dodel-Port Atlas, by Swiss botanist Arnold Dodel and his wife Carolina Port. Written and illustrated between 1878 and 1883, the Dodel-Port Atlas contained 42 botanical plates with an emphasis on microscopic views. The artwork is superb.

Several companies produced charts with brightly colored images presented on a solid black background to make the artwork easier to see from a distance. The Jung-Koch-Quintell (J-K-Q) company began producing botanical and zoological wallcharts in 1894 and continued through World War II, after which another company acquired rights to continue publishing and updating the charts as needed. The illustrations were prepared by Gottlieb von Koch, an artist who had worked with the noted zoologist and illustrator Ernst Haeckel. Unlike many of the wallcharts, the J-K-Q charts used no text with the images, choosing instead to print explanatory information on the back of the chart and in an accompanying booklet.

As these striking J-K-Q charts are still in production, they've become very popular with interior designers. Other charts have barely survived, and those that have are mostly in museum and private collections, many showing the signs of wear from years of classroom use.



Quince, *Cydonia vulgaris*, Dodel-Port - *Atlas der Botanik*

The two illustrations shown here clearly show the difference in style between the realism of the Dodel-Port quince and the more graphic style of the J-K-Q sunflower.

In Britain, botanical wallcharts were first used in a university setting and did not become as popular as in Europe. Professor John Stevens Henslow, Professor of Botany at Cambridge University, devised a set of diagrams to accompany his lectures. Henslow and his daughter Anne Henslow Barnard, who later became one of the illustrators for *Curtis's Botanical Magazine*, made rough sketches of plant structures. These were then refined and painted by Walter Hood Fitch, another of the *Botanical Magazine's* illustrators and one of Britain's finest botanical artists. This set of nine posters became *Professor Henslow's Botanical Diagrams*, completed in 1857.

If Henslow's name seems familiar, it is likely as the mentor and friend of Charles Darwin. It was Henslow who had been offered space as naturalist on the voyage of the HMS Beagle, in 1831, a position that he declined at the behest of his wife and one that he suggested would be well-suited to his pupil Darwin. After the publication of *On the Origin of Species*, it was Henslow who chaired the 1860 Oxford evolution debate.



Sunflower, *Helianthus annuus*, Jung-Koch-Quintell

Gardens Across America, Tucson Barrio goes to DC

If your summer plans include a trip to the nation's capitol, make sure to stop at the United States Botanic Garden to see a little bit of Tucson in a garden installation, called Gardens Across America. The Tucson Botanical Garden was invited to submit a proposal and was selected to be one of 14 public gardens on display on the grounds of the National Garden through October 1, 2019.

The design for the installation would reflect TBG's own Barrio Garden, a space that celebrates traditional Mexican-American gardens in Tucson. Through plants and materials, a Barrio Garden displays culture and tradition that has been passed down through generations.

While each Barrio Garden is as unique as the women who grow and tend them, they share the common theme of being a respite from the busy world. These outdoor living spaces are used for family celebrations and contemplation, activating all senses with bright flowers, edibles, and a variety of textures and materials.

The Tucson Botanical Garden asked TCSS member Maria Voris to provide a concept drawing and planting plan for the submission. The garden was selected to be featured as one of two displays at the front entrance of the National Garden.

After months of work by TBG staff and volunteers, six people—4 staff members, and TCSS members Maria Voris and her husband Thomas Staudt—flew to DC to build the installation. Bright blue walls were erected contrasted by weathered corrugated metal that helped enclosed the space for a courtyard feel. Found objects were repurposed as planters and objects of art, and interpretive signage was hand-painted in both English and Spanish. A crushed stone floor reflected the desert floor. After the first day of planting, birds, insects and human passers by were lured in by color, smell and the sight of unusual plants and a unique Tucson aesthetic.

Of the 75 distinct species of plants to fill the 375 square feet garden, 26 were cactus and succulents. Arguably the most talked about plant, as the team was building, was the ocotillo fencing that helped enclosed the space.

Opuntia ficus-indica (Indian fig/nopale) was planted for its traditional use as food, and *Aloe barbadensis* (Aloe vera) for its medicinal purposes. *Harris adscendens* (Moonlight cactus) and

Acanthocereus tetragonas (South American queen of the night) were placed to climb the ocotillo (*Fouquieria splendens*) fence. *Echinopsis chamaecereus* (peanut cactus), *Rhipsalidopsis gaertneri* (Easter cactus), *Echeveria* and *Senecio* spp were chosen because they can be found in gardens of Maria's Mexican-American aunts. *Echinocereus pentallophus* (lady finder), *Agave murpheyi* (Murphy agave), and *Pachyphytum hookeri* (Hooker's pachyphytum) were also included. Plants were planted in pots of different sizes or in 18" of planter-bed soil atop the flagstone surface of the USBG patio. The soil for cactus and succulents was amended with sand to improve drainage in DC's humid summers.

Saguaro boots and ribs, and cholla skeleton were used as pots, decoration and plant stakes.

Traditional barrio garden plants, loquat, fig, citrus, and pomegranate were placed in large pots as was a wheelbarrow full herbs including epazote, oregano, cilantro.

The immediate success of the garden was reflected in comments of visitors who wanted to come in, sit or take selfies in front of the bright blue walls and colorful plants. Visitors and National Garden employees said that the garden reminded them of a grandparents garden and home.

The garden was built in 3 days, but could not have been without the support of countless volunteers, help from local businesses and individuals (thank you TCSS members!) who donated time, money and materials to this special project!

More photos on the back page



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Thursday, August 22, 2019

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Webmaster: Keimpe Bronkhorst • webmaster@Tucsoncactus.org

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August 2019

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Presented by Judy Mielke

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Pima Prickly Park
Tereasa Corcoran

General Fund
Junie Hostetler

Conservation
David Yetman





DESERT BREEZE

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September 2019

Thursday, September 5, 2019 at 7:00pm

Who's Yer Daddy?

The story of Echinocereus x roetteri from the Jarilla Mountains, New Mexico

(With an introduction to introgressive hybridization)

Presented by Jerry Arp

Program Description: Resolving the mystery of the "Pink Echino"

Gerald K. (Jerry) Arp Ph.D., Univ. of Colorado, 1972. Dissertation, Studies in the Colorado Cacti. Dr. Arp developed an interest in plants as a youngster while growing up in Colorado in the 1950's. His initial plant interests were horticultural but frustration with some horticultural practices and an abiding interest in plant relationships pushed him into the Science of Botany. By pursuing botany, he hoped to resolve many questions regarding botanical groups of interest to him. In the middle 50's he became fascinated by the flora and fauna of the deserts and plateaus of the American Southwest. Shortly after receiving his Ph.D. in 1972, Dr. Arp's career goals went upside down. When he finally hit ground, he had secured a position at NASA, where he worked with data from Landsat, the world's first Earth Resources remote sensing satellite. He went on to pursue research in areas of surface geochemistry, geobotany, and biogeochemistry as applied to mineral and petroleum exploration. Dr. Arp returned to the world of satellites as Senior Imagery Analyst and Manager of Technical Support for a satellite-based company in Washington, DC. After 911, his expertise was applied to research for a variety of Government agencies, ultimately landing him at White Sands Missile Range, New Mexico. He has since retired to a life of poking cacti and wincing when they poke back. His anonymous retired life

ended abruptly when he was chatted up by Mark Sitter at B & B Cactus Farm, during a recent nursery visit and it has been downhill ever since.

Please make plans to come and enjoy this program. Talk with members and guests make new friends. Visit our library and check out some books! During the break, you will truly want to enjoy the great refreshments. Also, try to win some of the plants available in our raffle, then finally, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.



Front Garden

Photos on the next page



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

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

TCSS Program Presentation
Thursday, October 3, 2019 at 7:00pm

The Desert Moonlight Garden
Presented by Jason Wiley
Horticulturist, Arizona-Sonora Desert Museum
More information to come next month.

September 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

The Blooming Barrel sale was another success with gross receipts over \$6,000. We are now very short on rescued plants with only a few barrel cactus remaining. Hope we have a few more rescues this year. Remember, we are counting on you to be the eyes of potential sites that are going to be developed. Let us

know and we will follow up with the developers. Mrs. Greens World video about TEP and our rescue program is available at <https://www.mrsgreensworld.com/category/nature/>. I hope you enjoy it and it leads into our 20 year anniversary celebration of our rescue program.

It will be held on October 5, 2019 at Pima Prickly Park from 10:00 to 2:00 pm. There will be a short program at 10:30am, food trucks, music, exhibits and more. We have created a special t-shirt, bandana and other items for this event that will be for sale. We will commemorate 20 years of this special program and thank our partners in the community for making this an extraordinary success. **YOU ARE ESPECIALLY**

INVITED BECAUSE OF ALL THE EFFORT YOU HAVE PUT INTO THIS PROGRAM.

The Good Time Silent Auction and more is September 15 from 3:00 pm to 5:00 pm at Sky Islands Public High School. A description of the event is enclosed in this newsletter along with a page of bid sheets for you convenience. This is a great opportunity to get rid of your excess plants, pots etc and getting new ones. Donate special plants for the silent auction. It is great fun to bid and get something really special.

We are fast approaching the end of the year and the always fun Holiday Party on December 8, 2019. Great food, plants and gifts. More information in the next newsletter. It is also the time to for elections and to renew your membership. Why not consider renewing for several years. There will be 4 board members (3 year terms) plus the CSSA Representative (2 year term) up for election. Please consider these opportunities.

Thank you as always for your support

Dick Wiedhopf, President

Continued from Cover



Jerry and Penny



The pink Echinocereus



Greenhouse

Good Time Silent Auction

Sunday, September 15, 2019

Sky Islands Public High School

6000 E 14th Street

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. **There will be no discount pricing at the end of the event for the \$2.00, \$5.00, and \$10.00 plants.**

Bid sheets and price stickers will be available at the event. The Board has adopted the same policy as we had at Sonoran XII 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 1:00pm and 2:30pm for inclusion in this event.

There are 4 bid sheets on-line or included in mailed newsletters 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

For a desert gardener, one of the rewards for having survived the never-ending heat of June and July is the late summer explosion of Queen's wreath. With its dazzling clusters of hot pink flowers, *Antigonon leptopus* is a vigorous and sprawling vine that uses its tendrils to climb on and up anything in its path. The heart-shaped leaves are bright green with wavy margins and striking venation. Half-inch flowers range from pink to nearly red and are heavy nectar producers, making the plant very attractive to bees. The vine dies back in freezing temperatures but will readily regrow from underground tubers.

There are three species in the genus *Antigonon*, distributed from Mexico into Central America. Of the three, only the Queen's wreath has spread far afield from its native range, having been introduced as an ornamental in the southeast and gulf regions of the United States, several Pacific islands and the West Indies. In many areas, particularly islands, the vine is considered invasive as it becomes rampant, smothering the native vegetation (much like kudzu, only more attractive).

Antigonon leptopus was first described by Sir William Jackson Hooker from specimens collected in Mexico, in 1827. Two years earlier, the HMS Blossom, with a crew of 100 men under the command of Captain William Beechey, had sailed from England to the Pacific on a scientific and exploratory expedition to the Arctic. Their objective was to rendezvous near the Bering Strait with Sir John Franklin, whose expedition was traveling on land along the Canadian coast from the east. While the *Blossom* sailed to the Arctic in the summers of 1826 and 1827, Franklin's overland expedition never appeared. When not waiting around for Franklin, Beechey's expedition traveled to China and the Sandwich Islands, and the crew spent much time mapping and collecting specimens in the area around San Francisco. After

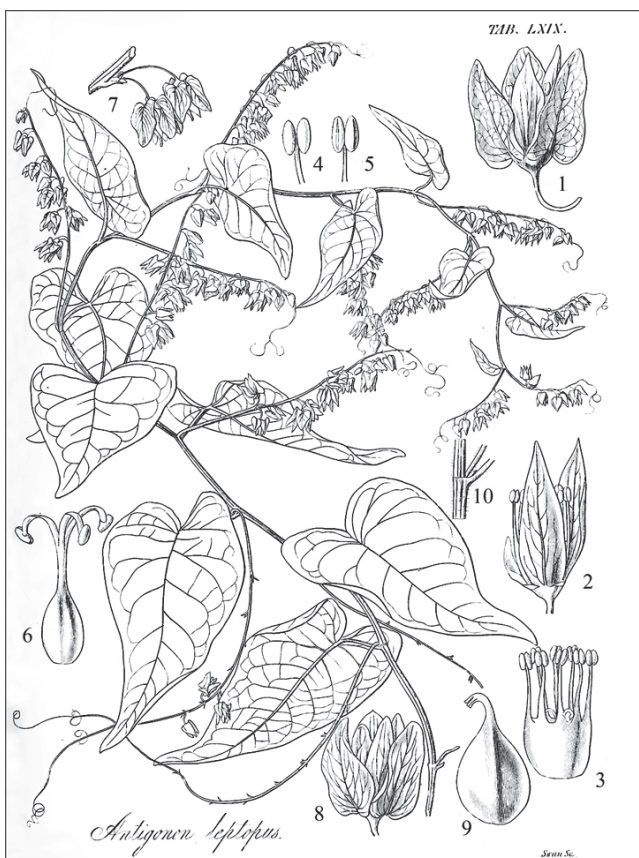
the second missed rendezvous with Franklin, the ship made for England, stopping in Mexico for additional collecting.

The expedition's botanical specimens were given to Hooker and George Walker Arnott, botanists at the University of Glasgow, who prepared a flora of the expedition. In 1841, they published *The Botany of Captain Beechey's Voyage*. The work contains 99 excellent botanical illustrations, 37 of which were drawn by Hooker.

The line drawing here is from Hooker and Arnott's flora. A few structures to note: Fig.1 at top right is an enlarged flower that shows three outer tepals with two smaller inner tepals; Fig.3 at bottom right shows the stamens with tepals removed; Fig.6 shows the pistil; and Fig.8 at bottom shows a single fruit.

The color illustration here is from "*Flore des Serres et des Jardins de l'Europe*", or "Flowers of the Greenhouses and Gardens of Europe", one of the finest horticultural journals of its day. Published in Belgium in 23 volumes from 1845 to 1883 by the horticulturist Louis Benoit van Houtte, the journal presented some 2,000 chromolithographs by the most skilled lithographers in Europe. While the painting of the Queen's wreath poses the plant in a contrived setting, it is a faithful representation of the flower's vibrant color and graceful vine.

Another illustration of *Antigonon leptopus* can be seen on the Florilegium Program's website. In 1897, *Curtis's Botanical Magazine* presented a painting of the vine by Walter Hood Fitch along with a description of the plant by Sir Joseph Dalton Hooker, W.J. Hooker's son. A link to this illustration is on our home page (<https://art-botanical.org/>).



The Botany of Captain Beechey's Voyage (1841), Illustrator not credited



Flore des Serres et des Jardins de l'Europe, Vol. XVIII 1869-70, Illustrator not credited

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Deadline for newsletter text or photos:
Thursday, September 26, 2019

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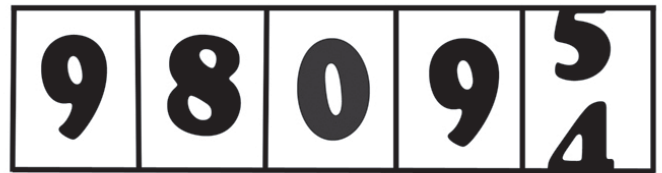
www.tucsoncactus.org

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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
444 Rescues - 35,225 Volunteer Hours (updated 8/26/19)

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 2019

Thursday, September 5, 2019 at 7:00pm

Who's Yer Daddy?

The story of Echinocereus x roetteri from the Jarilla Mountains, New Mexico

(With an introduction to introgressive hybridization)

Presented by Jerry Arp

Tuesday, September 10, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. Tucson, AZ

Sunday, September 15, 2019 at 7:00 pm

TCSS Good Time Silent Auction.

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.

General Fund

Marjorie Campbell

Julie Robinson

Pima Prickly Park

Wild Bill Pickett

**Honoring the Accomplishments of
Kevin Barber and Mark Dimmit**

Helen Barber



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

October 2019

Thursday, October 3, 2019 at 7:00pm

The Desert Moonlight Garden

Presented by Jason Wiley

Horticulturist, Arizona-Sonora Desert Museum

Most desert dwellers know that during the hot summer, they spend the majority of their time outside during the early mornings and evenings. So why not create a garden that is designed to experience specifically at night? A Moonlight Garden does just that! A well designed Moonlight Garden goes beyond just the sense of sight; it touches on all five senses to create a fully immersive experience. When our sense of sight is compromised, we use the senses of smell, sound, touch, and even taste to fully understand our surrounding environment. When selecting plants for a Moonlight garden, all of these senses should be considered. Not only do Moonlight Gardens benefit people, but many nocturnal pollinators that we have here in the desert as well, including moths and bats. There are also many night blooming plants that are native to the Sonoran Desert including Queen of the Night (*Peniocereus greggii*), Desert Four o' Clocks (*Mirabilis longiflora*), Sacred Datura (*Datura wrightii*), Night Blooming Hesperaloe (*Hesperaloe nocturna*), and many species of native Morning Glories. With so many desert nightblooming plants that attract nocturnal pollinators, the southwest makes a perfect setting for a Moonlight Garden. In this presentation professional horticulturist and designer, Jason Wiley, will discuss his plant selection technique as well as dive into other hardscape and lighting considerations for a Moonlight Garden.



Jason grew up on a sod farm cultivating his career in horticulture which inspired him and to connect people to their environment by creating meaningful experiences in the landscape. He received his Bachelors of Science in Horticulture from Arizona State University and also studied Landscape Architecture at Colorado State University for 3 years. He has worked in public gardens and for 9 years and has been a professional

Photos on the next page



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

TCSS Program Presentation

Thursday, November 7, 2019 at 7:00pm

“The horror of man and beast”: a relatively painless introduction to the *Cylindropuntia* (chollas) of Arizona

Presented by Michelle Cloud-Hughes

Desert Solitaire Botany and Ecological Restoration

More information and photos to come next month.

October 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!

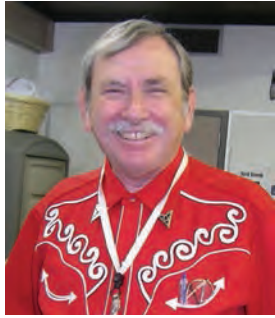
Continued from Cover

horticulturist for 16 years.

He currently curates the Tropical Deciduous Forest, Cactus Garden, and Agave Garden at the Arizona-Sonora Desert Museum. He self-initiated the transformation of the Cactus Garden which was once overlooked, and is now the most highly visited and photographed garden at the museum. He also designed, proposed, managed, and raised funds for the renewal of the Agave Garden. He is currently working on a project to expand the current Boojum Hill which represents the Catavina Boulder Field in Baja where Boojums naturally grow. His inspiration for this current presentation and hopefully soon to come garden is the purchase of his first house which sits

on a blank ¼ acre, where he will spend most of his time in the evenings.

This will be an excellent program that you will truly enjoy. Talk with other members and visitors and make new friends. Visit our library and check out some books! During the break, you will truly want to enjoy the great refreshments. Also, try to win some of the plants available in the raffle, and be sure to stay



President's Message

What a month "October"!

Our new Ramada (the Hub) at Pima Prickly Park has been installed in time for the 20 year celebration of our Rescue Program. The Pima County Parks staff has done another terrific job working with us at the park. I can't thank them enough for all their efforts and support.

The October 5 celebration is an important milestone for the rescue program and Pima Prickly Park development. I hope you will join us for a fun time from 10am to 2:00pm. There will be a short program, music, food trucks, our plant vendor sales, free plants and tour at the Native Plant Nursery and more. We have created a special T-shirts (\$15), bandanas (\$5) and pins (free) for the occasion. There will be a scavenger hunt and activities for the whole family. Everyone is welcome.

October is the month for plant sales. They are listed in this newsletter. Please support as many as you can. They keep our

hobby growing. The Arizona Sonora Desert Museum sale on September 28, 29 missed our newsletter printing. I hope you attended. Jason Wiley from the Museum will be our October meeting speaker. Please join us for his presentation.

I am very pleased that our membership continues to grow and has reach a record number of 1,357 so far this year. This is truly impressive and I thank you for your support.

We finish October with our Home Tours on October 26 (see the information in this newsletter). These are always special gardens which give all of us new ideas and encouragement.

We had a very successful Good Time Silent Auction in which we raised more than \$2,500 for our research grants program. Thanks to all who participated.

All these activities take a lot of planning and volunteers and we are fortunate to have so many members willing to help.

Thank you for your support

Dick Wiedhopf, President

SUPPORT OCTOBER PLANT SALES

Desert Botanical Garden

October 19 – October 20, 2019

PRICE: No admission charge to enter the Fall Plant Sale

Members Only Oct. 18, 7 a.m. – 5 p.m.

Saturday, Oct. 19 7 a.m. – 5 p.m.

Sunday, Oct. 20 8 a.m. – 3 p.m.

Tohono Chul

October 12 – October 13, 2019

7211 N Northern Ave

Members Only Oct. 9 12 noon – 6 p.m.

Saturday, Oct. 12 9 a.m. – 5 p.m.

Sunday, Oct. 13 10 a.m. – 4 p.m.

Boyce Thompson Arboretum

Fall Plant Sale

October 12 – October 27, 2019

Members Only Oct. 11

Members get 20% off all plants during the sale

Pima County Master Gardeners 2019

Fall Plant Sale

October 05, 2019 8:00am to 11:00am

Pima County Cooperative

Extension Demonstration Gardens

4210 N. Campbell Ave.

Tucson, AZ 85719

Garden A: Matt

A highlight of this property is its collection of columnar cacti. The striking openness of Matt's landscape draws the eye of the viewer to these handsome specimens.

Numerous Totem Pole Cactus, *Pachycereus schottii monstrose*, are clustered in key locations in Matt's front and backyard. These are a variety of Senita cactus. The smooth skin of this upright cactus lacks spines and is covered in lumps and bumps which resemble the wax of a melted candle. The folds and curves of the skin help the plant preserve moisture in its native region of Baja Mexico. Matt has another variety of bumpy Senita, *Pachycereus shottii var. mieckleyanus*, a thinner southern variety. Non-bumpy Senita are simply *Pachycereus schottii*.



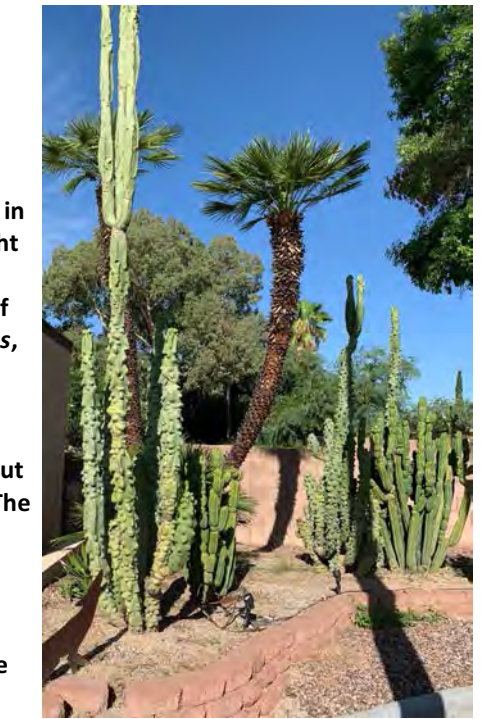
Adjacent to the Totem Pole cacti are Mexican Fence Post Cactus, or *Pachycereus marginatus*. This species does not develop arms, but new pups emerge from the soil and form an underground clump. The new pups grow straight up beside the parent. Over time, the tall, vertical columns can make an effective barrier, privacy fence, or a striking architectural statement in the landscape.

Matt began working on his .4 of an acre landscape 16 years ago. He brought in a lot of fill dirt to even out the soil level of the sloped backyard and began planting. Besides the dramatic display of columnar cacti, he has customized his yard to reflect his interests. Artificial turf in places softens the desert display. Two date palms, a Black Sphinx and a Hayani, and a raised bed of canna lilies near the pool contribute to a tropical feel in places. A pitch and putt green and a swimming pool encourage

recreation, and a fire pit and grill entice hanging out in the backyard. A stone water feature provides a gentle trickling sound and hummingbirds actively visit the three feeders. Matt built a man cave/garden shed to house, among other things, his 140 large Styrofoam cups to protect the tips of his columnar cacti from frost.

Matt displays sculpture and found objects on the corrugated metal fence he built near the back property line. A variety of metal and ceramic sculptures provide whimsical touches throughout the property

PESTS: Kangaroo rats and other rodents like to chew the roots of his cacti. A product that has helped Matt is Weiser's Nature's Defense Animal Repellent. These granules are said to repel a large array of pest animals through its irritant scent and to be nontoxic to humans, pets, and plant and food crops if used as directed.



Garden B: Stephen

El Jardin de Casa Villaescusa

Our desert garden auspiciously began in the winter of 2007. On January 15th an Arctic blast dropped temperatures to the low teens. It didn't climb above freezing for over 30 hours. The frost broke pipes, closed schools and decimated citrus, succulents, annuals, trees and the huge creeping fig that separated our walled backyard from the overgrown, prickly, thorny, desert back lot. Although we lived in this home for 20 years – we seldom ventured out back. It was impenetrable.

After I cleared away the dense overgrowth and dead vegetation, I discovered treasures previously hidden in our sloping, 1.75-acre foothills lot. We had stunning views of three Catalina Mountain canyons, a sea of rocks, an abundance of birds, reptiles & mammals and scores of large cacti and trees.



WATERING SCHEDULE: When plants are established, I rely on rainfall, supplemented with harvested rainwater as needed – wildflowers love it.

GARDEN PESTS: Javelinas were a big problem the first few years. Protected plants with hardware cloth secured by long tent stakes. Spread dog-poop soup across their trails. Not for the faint-of-heart but worked well. Insects use soapy water – no insecticides.

TIPS: Solicit advice from fellow gardeners. Grateful for many ideas and motivations from TCSS tours. Truly inspired by *"Plant Driven Design – Creating Gardens That Honor Plants, Place and Spirit"*. Pay attention to the flow of the space. Fully experience its rhythm and the variations through all seasons. It takes time to create. Gardening is a delightful meditation to ground yourself in the present and enrich your soul!

It has been my pleasure to "Saws-All", shape and plant this amazing plot. The meditation garden and firepit came first, followed by the Virgin Shrine, then hiking trails for the children. We have created several distinctive areas, like the trichocereus shade gardens and the Zen Hill. Now I am opening the Bosque and lower areas that traverse Ventana Canyon Wash. Thankfully, it's always changing, and my puttering will never end!

Immense gratitude for friends, Debra and Rick Raeber who graciously offered ideas, assistance, practical wisdom, cuttings and agave pups. Also, to Dick Munghia who created the compelling stone features. Otherwise, I do the work. Always the flower geek, I sow seasonal wildflowers. Recently, I added LED lighting so we can enjoy the beauty, safely at night.

SOIL MIX: Prefer Plants for the Southwest soil mix





Garden C: Anne and Charlene

A Plant Collector's Paradise

"When we purchased our home seven years ago, the landscape had been neglected due to its aging owners. There were more than 30 saguaros, prickly pears, agaves, native barrels and two very nice ocotillos. In many places, especially south of the pool area, the vegetation was extremely overgrown. It has been a pleasure to add cacti, succulents and desert plantings to create what we feel is a desert oasis."

With a lot size of 3.5 acres, Anne and Charlene have created a plant collector's paradise, with enough space between plants to create a soothing minimalist feel. Artfully designed, the plants are alternately clustered for visual

interest and in other places spread out to provide adequate growing space. A mix of shade and sun allows experimentation with different varieties of plants.

A variety of barrel cactus, columnar cactus, prickly pear, cholla, agaves, euphorbia and other cacti and succulent species are creatively spread throughout the landscape. In addition, metal sculptures are judiciously distributed to complement their garden design.



In addition, Anne and Charlene have planted an unusual collection of 32 species trees including carob, Silver-leaved mountain gum (*Eucalyptus pulverulenta*), hairy mountain mahogany, Contorted jujube, four citrus varieties, three fig varieties and two ash varieties. A favorite is the blackbrush acacia or *Vachellia rigidula*, native to Texas.

SOIL MIX: "When we plant in ground, we do not amend the soil in any way. When we plant pots, we use Tanks Cactus and Succulent Mix."



WATERING: "Once we settle into June, we use a sprinkler to water all of the larger areas of cactus and hose to water cacti here and there. We water every two weeks when hot and dry."

GARDEN PESTS: "We use cultural practices to keep pack rats at bay by pruning the bottom growth of agaves and prickly pears and replacing certain shrubs with columnar cacti. Javelinas are only an issue on the north side of the house — and are interested in one very large agave in particular. We simply fill in their digging . . . and keep an eye out for them."

TIPS FOR OTHER DESERT GARDENERS:
"Explore the beauty of the cactus world! We have been in Arizona five years and it took me two of those years to really begin to appreciate the architectural beauty of cacti. Additionally, cacti are interesting year-round, low maintenance, and low water. They are meant to be here!"



Garden D: Daphna and Frank

While attending university in Jerusalem I enjoyed the delicious “sabras” (prickly pear fruits) sold by street vendors and in open markets. While visiting Arizona many years later, Frank introduced me to the Sonoran desert cacti. He had become enamored with the native vegetation while conducting some research in Tucson in the 1970s, long before we knew each other. When we moved to Tucson in 2003, our house came with a grass yard and a sprinkler system. We got rid of that and I learned how to plant cacti and succulents, many of which originated from TCSS. In fact, all of our ocotillos are rescues.



LOT SIZE: 0.75 acre

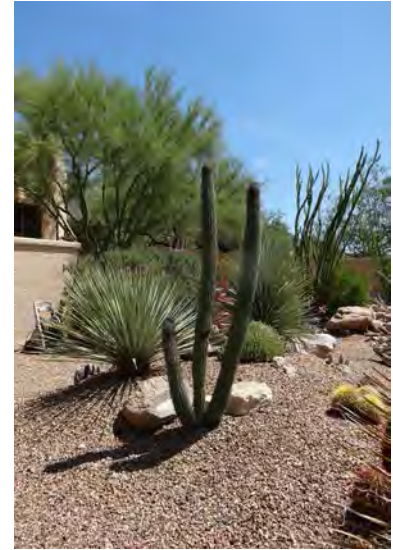
SOIL MIX: For potting, I combine about 75% cactus and succulent mix (such as Home Depot brand) with 25% perlite. If drainage is critical, I use a ratio of 65/35, or even 50/50. For landscape plants, I mix perlite or sand into the desert soil to improve drainage. Before planting, I sprinkle sulfur powder on the roots to prevent fungus. When I plant agaves, I sprinkle a systemic granular product on the bottom of the hole I’ve dug to help protect against agave beetles and grubs.



WATERING SCHEDULE: About once a week I water certain plants, especially new cacti, with a slow drip from a hose for a couple of hours. In growing season, potted cacti and succulents are watered by hose weekly until the water runs out the bottom of the pot. I gradually back off to about once a month or less in winter. When I think of it (rarely) I fertilize cacti during the growing season.

GARDEN PESTS: I remove lower prickly pear pads to keep them off the ground and, hopefully, discourage rodents. When holes or mounds pop up, I knock them down and hope they don’t return. It hasn’t been a huge problem.

(Don’t miss seeing the desert wash that runs under the house where javelina find shelter during the hottest time of the year.)



When we moved into our neighborhood the vegetation at the main entrance and on the medians needed some TLC. I volunteered to oversee the landscaping and was given a budget to purchase plants at my discretion. Eventually, I became Landscape Director on our HOA board and served for over a dozen years. I am very proud that many of the cacti in our neighborhood landscaping originated from TCSS cactus rescue sales.



Garden E: Debra and Rick

Debra and Rick bought their current house a little over 15 years ago. At the time Debra was working for Gene and Jane at Plants for the Southwest (PSW). Their two acres contained a large lawn, many citrus trees, roses, and quite a few non-drought tolerant trees and shrubs. There was an irrigation system with 12 stations.

Debra started bringing cactus and other succulent plants home from work and they started planting them on the property. One thing led to another, mainly some very large water bills due to irrigation leaks, and they ended up removing the lawn, the citrus and roses and all of the irrigation.

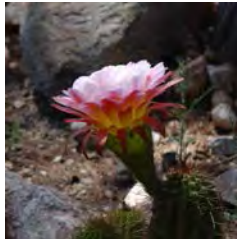
The influence of working at the nursery led them to have a shade structure built for growing seedlings. They grow native trees, shrubs, cacti, aloes, and ocotillos from seed and other succulent plants from cuttings. They like to landscape using rocks and top dressing brought home from outings around Southern Arizona. Over the years, a few rocks at a time, they

have created a desert landscape using mostly plants that they propagated themselves. Their biggest success has been with all the different astrophytums. Producing them by the hundreds, they love the varieties that are created when they cross with each other. With a need for lots of planters all around their property, Debra also got hooked on making pots after meeting Jan Bell and some other favorite potters at PSW.

SOIL & WATER: Their preferred soil mix is the mixture from Plants for the Southwest. For cuttings they add a little extra pumice. During the summer they water new seedlings in the shade house daily, everything else once a week. As native trees get established, they require less and less water. If it's especially hot, they pull hoses around and put a sprinkler on the trees at a low drip. Digging wells around the trees to hold water makes a huge difference.

Debra and Rick installed two ponds, one in the ground and the other raised above ground. A friend has supplied amazing water plants that he raises in his many ponds. They really enjoy having the ponds and the critters that have come because of them. There are many dragonflies, damselflies, native shrimp, snails, red spotted toads and at night the property is visited by ringtail cats and bobcats as revealed by a motion camera.

PESTS: No pesticides of any kind are used. When mealybugs show up, they are sprayed with alcohol. Having moved to Tucson because of the wildlife, they tolerate caterpillars that eat the leaves off their grapes, or ants that strip the leaves off acacias. Mostly everything recovers. Rick is a reptile guy and he has set up rock condos to encourage snakes and lizards to hang out. Mediterranean geckos scramble around high on the walls in the evening. Everybody is happily feasting on insects and hopefully pack rats!"



Low Desert Moonlight Garden Plant Selections

List and scoring provided by: Jason Wiley

Species	Sight	Smell	Sound	Touch	Taste	Nocturnal Pollinators	Frequently Blooms	Architecture	Desert Adaptation	Availability	Score
Trichocereus 'Big Bertha'	xx	x				x	x	x	x	x	8
Cereus repandus / Cereus peruvianus	x	?			x	x	x	x	x	x	7
Cortaderia selloana 'Pumila'	x		xx	x		x	x	x		x	7
Pachycereus pringlei	x				x	xx		x	x	x	7
Yucca rostrata	xx					x		x	x	x	6
Peniocereus greggii	x	xx				xx			x		6
Yucca gloriosa 'Variegata'	xx		x			x		x		x	6
Corymbia papuana	x	x	x					x	x		5
Citrus sp.		xx			x		x			x	5
Trichocereus spachianus	x	x				x	?	x	x		5
Yucca ridgida	xx					x		x	x		5
Furcraea Foetida 'Variegata'	x	x				x		x	? Cold hardiness	x	5
Opuntia 'Woolly Jacket'	x			x				x		x	5
Lilium formosanum	x	x	x			x	?	x	?		5
Sophora secundiflora 'Silver Peso'	x	xx							x	x	5
Aloysia vigata		xx					xx		x	x	5
Brugmansia sp.	xx	x				x	x	x		x	5
Phormium sp.	x		x					x		x	5
Gaura sp.	x					x			x		5
Convolvulus cenormum	xx					?					5
Berlandiera lyrata							x		x		5
Melampodium leucanthum	x	xx					xxx		x	x	5
Agave sisalana variagata	x					x		x	x	x	5
Agave ovatifolia	x					x		x	x	x	5
Buddleia marrubifolia	x	x		x			x		x	x	5
Oenothera sp	x					x			x	x	5
Maireana sedifolia	x								x	x	5
Artemisia 'Powis Castle'	x	x	xx	xx						x	5
Centaurea cineraria	x			x						x	5
Senecio haworthii	x			x					? Heat Tolerance		5
Trichocereus terscheckii	x					x	x	x	x	x	5
Cleistocactus strausii	x							x	x	x	5
Lavandula sp.	x	x			x		x		?		5
Discocactus horstii	x	x				x	?	x	prone to rot		4
Cynara cardunculus	x				x		x	x			4
Mariosousa willardiana	x							x	x		4
Eucalyptus 'Moon Lagoon'	x	x	x						?		4
Mammillaria geminiflora	x							x	x	x	4
Oreocereus	x							x	x	x	4
Arundo Donax 'Peppermint Stick'	x		xx					x			4
Vallesia laciniata		xx				?	x	x	x		4

Save These Dates for 2020

The Sonoran XIII Conference
Friday, April 24, and Saturday, April 25, 2020

Great Expectations for an Excellent Educational Weekend and More!
Speakers • Workshops • Vendor and Rescue Plant Sales
Silent Auction • Excellent Lunch and Dinner • Drinks • Lots of Fun and More!

We are looking for any ideas to improve this event and also asking for your help with planning and selecting workshops and much more.

Please contact me with your thoughts and also let me know if you would like to be on the Sonoran XIII Committee

Vonn Watkins
cactusdude1@yahoo.com

20th Anniversary celebration of the TCSS Rescue Crew

Saturday October 5th – Pima Prickly Park
3500 W. River Road

Bring the family to Pima Prickly Park and celebrate the 20th anniversary of the Tucson Cactus and Succulent Society Rescue Crew. There will be a short program highlighting how

the rescue program got started and a thank you to all the organizations we have partnered with over the years which contributed to the success of the program.

Agenda

- 10:00-2:00 **Food trucks:**
Drew's Dogs, Peddlers on the Path

Living with Urban Wildlife Trailer

Posters of Rescues and Pima Prickly Park in the lobby

Commemorative T-Shirts and Bandanas for sale

Vendor Member Plant sale
East Entrance: 5845 N. Camino de la Tierra
- 10:30-11:00 Program at The Hub ramada
- 11:30-1:30 Flute Club at large ramada
- 12:30-1:30 Tour Pima County Nursery
Make seed balls; select free plant
- 11:15-2:00 Scavenger Hunt in Pima Prickly Park

Program Speakers:

- | | |
|-------------------|----------------------------------|
| Richard Wiedhopf | Welcome, President of TCSS |
| Chris Monrad | Monrad Engineering, Inc. |
| Donna Ellis | TCSS Rescue Coordinator |
| Jessie Byrd | Pima County Native Plant Nursery |
| Chuck Huckelberry | Pima County Administrator |
| Richard/Dick | Closing |



TCSS BOARD

Officers

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Vice President: Vonn Watkins • vp@Tucsoncactus.org

Secretary: Monica Wnuk
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Treasurer: Cathy Robson
treasurer@Tucsoncactus.org

Board of Directors:
board@Tucsoncactus.org
(terms expire December 31 of year indicated)

Keimpe Bronkhorst (2021)

Jessie Byrd (2021)

Crystal Cannon (2021)

Linda Heisley (2021)

Steve Chesser (2020)

Donna Ellis (2020)

Bill Salisbury (2020)

Kris Thompson (2020)

Noe' Mayotte (2019)

Peter Ertman (2019)

Don Morehart (2019)

Thomas Staudt (2019)

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Bill Holcombe (2019)

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cactus@Tucsoncactus.org

Education: Laurie Naugle • education@Tucsoncactus.org

Free Plants: Donna Ellis • plants@Tucsoncactus.org

Floilegium: Margaret Pope • art@Tucsoncactus.org

Librarian: Brad Haeckel • librarian@Tucsoncactus.org

Prickly Park: Linda Heisley • park@Tucsoncactus.org

Programs: Vonn Watkins • programs@Tucsoncactus.org

Refreshments: Patsy Franna • 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

Vendor Coordinator: Dale Johnson • vendors@tucsoncactus.org

Plant Sales: Linda Heisley • sales@tucsoncactus.org

Field Guide Sales: Susan Durham & John Durham
books@tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Thursday, October 31, 2019

TCSS Web Page:

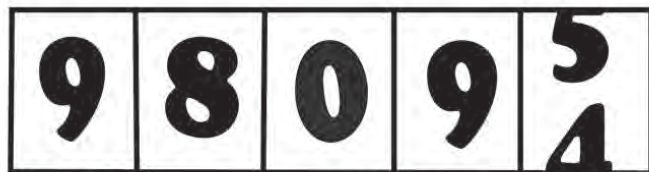
www.tucsoncactus.org

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
444 Rescues - 35,225 Volunteer Hours (updated 8/26/19)

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.

October 2019

Thursday, October 3, 2019 at 7:00pm

The Desert Moonlight Garden

Presented by Jason Wiley

Horticulturist, Arizona-Sonora Desert Museum

Saturday October 5, 2019 from 10 am to 2 pm

20th Anniversary Celebration of the TCSS

Cactus Rescue Program

Pima Prickly Park 3500 W. River Road, Tucson, AZ

Tuesday, October 8, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at

1510 E Grant Rd. Tucson, AZ

Saturday October 26, 2019 from 9 am - 3 pm

TCSS Home Tour

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.

Unrestricted fund

Lauren Harvey

"Thank you to Bill Holcombe and Bill Peachey"

Pima Prickly Park

Tony and Diana Sprague

Get a jump on your Christmas gift list, or just stop by to say hello, pet the pup, and see some beautiful ceramic yard accents and desert flora paintings.

TCSS members Dale Wesner, Sue Hildreth, Melanie Campbell-Carter, and Pauline Savage are part of the

Open Studio Tour November 2-3

6840 N Stardust Circle, near 1st & Orange Grove.

For more info go to ost.artsfoundtucson.org/north-tour



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

November 2019

Thursday, November 7, 2019 at 7:00pm

The horror of man and beast: a relatively painless introduction to the *Cylindropuntia* (chollas) of Arizona

Presented by Michelle Cloud-Hughes



In this presentation, Michelle will provide a general overview of the cactus genus *Cylindropuntia* (chollas) and in-depth descriptions for the cholla species of Arizona. She will focus first on cholla of the Tucson area, followed by the other cholla of Arizona. She will also discuss the most common naturally-occurring hybrids, along with recent genetic research and taxonomic changes.

Michelle Cloud-Hughes is a botanist specializing in desert flora and ecosystems. She worked for the Soil Ecology and Restoration Group at San Diego State University from 1997 to 2013 and spent most of those years doing restoration work in the central Mojave Desert at Fort Irwin National Training Center. In 2010 she started her company, Desert Solitaire Botany and Ecological Restoration, and since then has been involved in many rare plant surveys and other botanical projects throughout the southwestern U.S. Her main love is *Cylindropuntia*, but she is also fascinated by other cacti, particularly *Echinocereus*, *Grusonia*, *Pediocactus*, and occasionally even *Opuntia*.



This will be the last program presentation for 2019, so please join in welcoming Michelle back to Tucson. Be sure to come welcome new members and visitors and make some new friends. Visit our library and check out some books! During the break, you will want to enjoy the great refreshments and also, try your luck to win some of the plants available in the raffle. Stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society. Thanks to everyone for attending our various programs this year!



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

Sunday, December 8, 2019
TCSS Annual Holiday Party

November Meeting Refreshments

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



President's Message

On October 30, 2019 the 100,000th plant was rescued. What an incredible milestone with which to be associated. I am very proud to say that there are two of us that were at the rescue where the first plant was saved and at the rescue of the 100,000th plant saved. Of course I am referring to myself and Vonn Watkins. We are 2 of the 4

founders of the rescue program and have stuck with it for the last 20 years. Chris Monrad, another founder, couldn't make it to the rescue but helped obtain that rescue site opportunity.

On October 5 we celebrated the 20 year anniversary of the Rescue Program. It was a wonderful celebration at Pima Prickly Park that brought together many of the members, partners and friends that have made it such an unbelievable success. One of the highlights of the event was a series of pictures from twenty years of rescues. Thanks to all who helped and participated.

We had an excellent turn out for the annual Home Tour and I want to thank the committee, homeowners and all the members and guest who took part. All the homes were special and showed off the different way in which cacti and succulents are used to enhance their landscapes. I always get new ideas from these tours.

The next 5 weeks are really packed with special events starting with a great meeting and speaker on November 7. Two days later on November 9, 2019 is a special PLANT SALE. We are overstocked with plants from recent rescues and are offering every plant to everyone who attends at 20% off. This discount applies only to rescued and TCSS plants. Other items and vendor sales have established prices on their merchandise.

In mid-November the End of the Year Mailing will be sent to all current members. This mailing includes the first membership renewal notice, bios and the ballot for new Board of Directors and CSSA Representatives, also information and RSVP notice for the Holiday Party on December 8, 2019. This is also the time to consider a tax deductible contribution to support many of our activities. Your contributions have helped to make it possible to maintain the Society with the same membership dues for more than 25 years. That's incredible!

At the November 7 meeting, candidates for office will be introduced. I wish all 1,386 of you and your families a Happy Thanksgiving.

Thank you for all your support.

Dick Wiedhopf, President

Bach's Cactus Nursery has unveiled their temporary display of over 50 differently named Ferocacti

This is a rare chance to see what is likely the largest public exposition of the many plants in the genus.

Several of these display specimens are generally rare or unavailable in cultivation, but Bach's Nursery and various growers in the Tucson area are underway with plans to develop a stock of parent plants and a seed bank to help make these rare species more readily available over time.

The photos show a number of the plants in the pre-stage area prior to the assembly of the public display.



100,000 Cacti Rescued October 30, 2019

Photo by William Peachey



FROM THE FLORILEGIUM

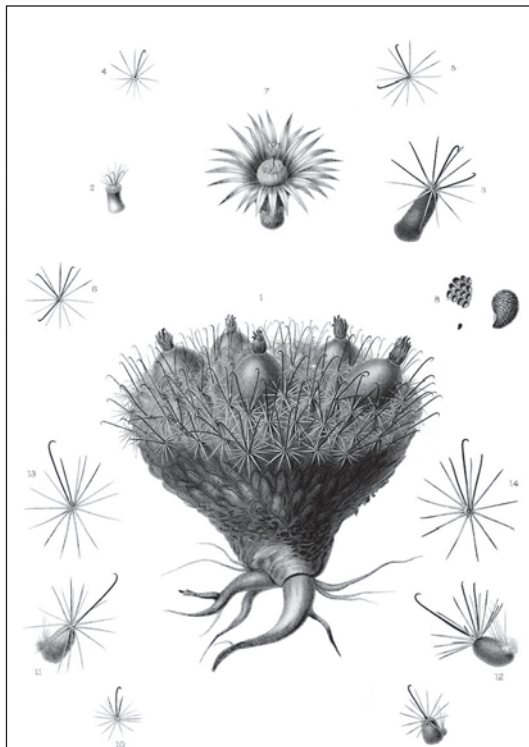
“No name is more largely commemorated in the botany of Texas, New Mexico, and Arizona than that of Charles Wright. ... Surely no botanist ever better earned such scientific remembrance by entire devotion, acute observation, severe exertion, and perseverance under hardship and privation.”

This tribute, written in 1886, is from Asa Gray's obituary for Charles Wright (1811–1885) in *The American Journal of Science*. Gray, professor of botany at Harvard, had known Wright for forty years, as both colleague and friend. Their relationship began in 1844 with a letter from Wright who had been teaching and botanizing in eastern Texas for several years. Previously, plants had been collected in central and southwestern Texas by Ferdinand Lindheimer, Jean Louis Berlandier, Ferdinand Roemer, and Thomas Drummond, but eastern Texas was still undiscovered ground for plant collectors. Thus, Gray welcomed Wright's letter, which was accompanied by a selection of plants that he had collected in that part of Texas.

In 1848, Wright was invited to Cambridge by Gray to organize the large number of plant specimens that he had sent from Texas. While there, Gray arranged for Wright to travel as botanist across the Rio Grande valley with a U.S. Army expedition. While Wright was granted permission to accompany the expedition, the Army provided neither rations nor transportation for the botanist, agreeing only to transport his luggage and his plant collections. In spite of many hardships, Wright walked the entire distance of 673 miles from Galveston to El Paso and collected some 1,400 specimens for Gray and a number of cacti specimens for George Engelmann. Two years later, Wright was hired by the U.S. Boundary Survey Commission as surveyor and botanist with the survey team of Col. J. D. Graham. After a year, he amassed a large collection of plants from Texas, New Mexico, and Arizona that he delivered to Gray. Beginning in 1852,



Penstemon wrightii, Wright's beardtongue
Illustrator: Walter Hood Fitch
Curtis's *Botanical Magazine*,
Vol. 72, 1851



Mammillaria wrightii, Wright's nipple cactus
Illustrator: Paulus Roetter, Engraver: Philibert and
Eugène Picart, *The Report on the United States and
Mexican Boundary Survey*
Major William H. Emory, 1859
Vol. II "Botany of the Boundary. Cactaceae"

Gray published much of Wright's collection in the multi-volume "*Plantae Wrightianae*", with the remainder later published in the 1859 Boundary Survey Report.

After returning from the southwest, Wright joined the U.S. North Pacific Exploring Expedition as its official botanist. For three years, the expedition explored the China Seas, the Bering Strait, and the North Pacific Ocean. At the voyage's end, in 1856, Wright returned briefly to the East and then began eleven years of botanical exploration in Cuba. Wright's last exploratory voyage was to Santo Domingo, in 1871. The remainder of his life was spent at his family home in Connecticut, gardening, farming, caring for his brother and two sisters, and occasionally botanizing. In 1885, Wright passed away suddenly from a heart condition that he had developed while collecting in Cuba.

The two illustrations here are of plants named in honor of Charles Wright. Both illustrations accompanied the first botanical descriptions published for these two plants. The first illustration is of *Mammillaria wrightii*, named for Wright by George Engelmann, author of *Cactaceae of the Boundary*: "This species I with pleasure dedicate to my friend, Mr. Charles Wright, to whose indefatigable exertions botany owes so many new discoveries along the Mexican boundary line, and lately in more distant parts of the globe." The illustration is by Paulus Roetter, the exceptional artist of the *Cactaceae of the Boundary*.

The second illustration is of *Penstemon wrightii*, which was first described in Curtis's *Botanical Magazine*, in 1851, by William Jackson Hooker with an illustration painted by Walter Hood Fitch, the *Botanical Magazine's* esteemed illustrator. The specimen had been grown at the Royal Gardens Kew from seed collected by Wright in Texas and given to Hooker by Engelmann



*****SPECIAL 20%* OFF FALL SALE*****

300+ Rescued Barrels, 300+ Rescued Hedgehogs

Assorted limited quantities of other cacti and succulent plants

Saturday- November 9, 2019

8:00am to 10:00am

4342 N 4th Avenue (between Wetmore and Limberlost)

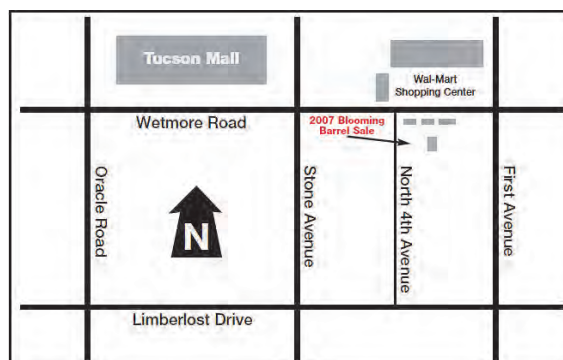
Member vendors will be selling other cactus and succulents starting at 7:00am (Discounts don't apply)

20%* off Sale Starts at 8:00am

(Numbered entry tickets will be given out starting at 7:00am to make the sale more manageable)

Come Early For Best Selection

We have 300+ barrel cactus –all sizes and 300+ Hedgehogs. The Tucson Cactus and Succulent Society rescue program saves plants that are about to be lost to new construction of homes, businesses, roads and other developments and uses the profits to invest in grants for education (K-12) and research, Pima Prickly Park and to support other educational projects of the Society.



CASH, CHECKS OR CREDIT CARDS ACCEPTED

*only discount given at this sale

For MEMBERSHIP and more information check out our website at:

www.TucsonCactus.org

TCSS cell: 256-2447

Copies of our "Field Guide to Cacti and other Succulents of Arizona" will be available for purchase at this sale.

THANK YOU FOR YOUR SUPPORT OF OUR RESCUE PROGRAM

**Tucson Cactus and Succulent Society
Holiday Party, Annual Meeting, Awards & Gift Exchange**

When: December 08, 2019
Where: Sky Islands Public High School
6000 E 14th St
Time: 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 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.**

In the next few weeks, you will be receiving a mailing containing a RSVP for the Holiday Party, Ballot(s) for Officers & Board Members, Membership Renewal and donations for 2019. Please return Holiday Party RSVP and Ballot by December 4 (seating is limited)

Questions?- email info@tucsoncactus.org or call 520-256-2447

Exploratory trip to the Coteco Biological Reserve

by Thomas Staudt

In 2018 through its conservation fund TCSS took on the responsibility of covering the preservation and maintenance cost for the Coteco Biological Preserve (pitayal) located about 45 minutes southwest of Navojoa, Sonora, Mexico. This is a cactus rich area with over 500 species of plants including grasses, herbs, shrubs, trees and of course various cacti. In particular interest was the pitayal or organ pipe (*Stenocereus thurberi*). This is a culturally important plant used for food, fencing, roofing, fuel and a variety of medicinal remedies.

Ethnobotanist David Yetman along with the local population and other American and Mexican researchers were quick to recognize the value of this unique and geographically limited coastal thornscrub ecosystem, and worked diligently to establish and preserve this area from the impending encroachment of agribusiness bulldozers.

This October, four TCSS members traveled with David Yetman and Mexican ecologist Alberto Búrquez to the 500 acre Preserve on a routine evaluation of the fencing stability and overall habitat at the site. The drive from Tucson follows Mexican Highway 15 through Sonora and past the major cities Hermosillo and Ciudad Obergón. Recent highway improvements and bypasses allow for ease in avoiding the congestion of those cities. Acquiring tourist cards and a vehicle permit were required stops along the way and provided a chance to stretch our legs. All four travelers were quite enthusiastic and eager to identify new plants as we traveled (six species of columnar cacti were observed). In the evening we settled into a comfortable motel in the city of Navojoa.

Justino Flores, a resident of the Mayo community of Massiaca guided the group when touring the site. His expertise with locating and naming plants was invaluable. Four species of columnar cactus are found in the preserve: organ pipe (*Stenocereus thurberi*), senita (*Lophocereus (Pachycereus) schottii*), etcho (*Pachycereus pecten-aboriginum*) and octopus cactus, (*Stenocereus alamosensis*). The saguaro, (*Carnegiea*

gigantea and cardon, (*Pachycereus pringlei*) were seen on the drive but not present at the site. Also abundant were a dozen or so tropical tree species including the guayacán (*Guaiaacum coulteri*), saituna (*Ziziphus amole*), endemics jito (*Forchhammeria watsonii*) and jócona (*Havardia sonorae*), jaboncillo (*Fouquieria macdougalii*), mezquite (*Prosopis glandulosa*), papelío (*Jatropha cordata* and *cuneata*), pasio (*Maytenus phyllanthoides*), palo chino (*Havardia mexicanum*), San juanico (*Jacquinia macrocarpa*), and several others. *Pereskia porteri* the cacti predecessor was found, as was *Peniocereus striatus*. *Mammillaria* species were also seen, including *Mammillaria bocensis*.

Many of the Massiaca Mayos and other adjacent Mayo communities harvest the sweet and tasty fruit of the pitayal. This takes place in the heat of July, August, and September. The fruit is processed into jams and beverage concentrates, both for domestic consumption (residents of the region consume a dozen or so per day) and for sale in local and regional markets. Our group was very fortunate to be able to sample these products at the Flores residence.

Our observation concluded that the fencing at the Coteco Preserve was intact, the pitayal (organ pipes) were abundant and the area was under competent management.

The Coteco site has proved to be a valuable location for recent and ongoing research. The contained area provides a controlled site to compare and contrast invasion by agribusiness and overgrazing.

This was a quickly planned and arranged trip and didn't fit the timing for most interested members. We will be looking into putting together another visit to the pitayal next Sept/Oct.

For more information on this location please refer to David Yetman's detailed article at this site:

www.tucsoncactus.org/pdf_files/Creation_of_the_Pitayal.pdf



Travel group with large organ pipe cactus (*Stenocereus thurberi*) and etcho (*Pachycereus pecten-aboriginum*). photo Jan Emming



Peinocereus striatus with red fruit and critic stem. photo Jan Emming



Jam made from pitayal (organ pipe cactus fruit). photo Thomas Staudt



Pereskia porteri a leafy tropical cacti. photo Jan Emming

**TCSS BOARD
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Vice President: Vonn Watkins • vp@Tucsoncactus.org

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November 2019

Thursday, November 7, 2019 at 7:00pm

The horror of man and beast: a relatively painless introduction to the *Cylindropuntia* (chollas) of Arizona
Presented by Michelle Cloud-Hughes

Saturday November 9, 2019 from 8 - 10 am

Special 20% off (just this one time) TCSS Cactus Rescue Fall Sale. Open to the public

Tuesday, November 12, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at
1510 E Grant Rd. Tucson, AZ

For Those 70 1/2 or Older

If you are 70 1/2 or older, you can use the IRA charitable rollover to make a tax-free gift to The Tucson Cactus & Succulent Society. You may transfer up to \$100,000 directly to a qualified nonprofit institution, such as TCSS, without paying income tax on the distribution. Your gift will have a real positive impact on all we do.

Acknowledgement Of Contributions

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We extend our sincere thanks for your support.

General Fund
Fred & Wanda Monique



DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

December 2019

Sunday, December 8, 2019 • 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

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If you bring a gift you get a gift and we have a fun
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be a short Annual Meeting,
Election results, Awards and Table decoration
plants to be given away.



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

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

TCSS Program Presentation

Thursday, January 2, 2020 at 7:00pm

SPINY SUCCULENTS:

Euphorbias, Cacti, and Other Sculptural Succulents
and (Mostly) Spiny Xerophytic Plants"

Presented by Jeff Moore

Owner of Solana Succulents Retail Nursery
in Solana Beach, California



President's Message

I am writing this on November 21, 2019 in support of the request from our newsletter editor, Karen Keller. I (We) don't thank her enough for putting together a monthly newsletter that provides us with important and interesting information. We try to get you the most up to date information and still meet meeting deadlines. Since

the Post Office sends all the mail to Phoenix to be sorted and then returned to Tucson to be distributed, there is a minimum of 2 day before the mail is delivered. The newsletter is sent out to be printed and folded for over 130 members and then stuffed, stamped and mailed. That's a process. It is also sent to our webmaster (Keimpe Bronkhorst) in a different format (in color) to be put on the website and he notifies all members by email. It is a monthly process that is dependent on Karen and Keimpe. They do a great job. Thank you!

I am processing ballots, memberships, donations and holiday party reservations. Our mail box was filled yesterday and today. I have not been able to process memberships and donations but will certainly have those done in the next two weeks or so.

Our Rescue Program hasn't stalled because we reached the 100,000 mark and Donna Ellis, Rescue Coordinator, along with Robert Ellis and the Rescue Crew are working on the next 100,000. New opportunities to save plants are happening now.

We have sold more than 2,500 copies of the 2nd edition of our "Field Guide." I am sure there will be another update in the future. We have sold in total more than 5,000 copies of the 1st and 2nd editions. This has been a great public relations experience for the Society. I hope you have a copy. They do make great Holiday Gifts at only \$25.95.

Thomas Staudt has agreed to head up the conservation Committee. Thomas has worked with David Yetman to support his conversation effort in Mexico which we are now providing the majority of financial support. Thomas has been a longtime supporter of the rescue program and will take the lead on other conservation efforts.

Linda Heisley leads our effort in developing Pima Prickly Park. The current rain storm has really helped the plants. We are in the process of expanding the Agave Garden and developing the long awaited prickly pear display. Next year is our 9th year of development. We always need more volunteers to plant, water and maintain. It's fun!!

Finally, we have ended 2019 membership with a total of 1,401. This is a new record since it tops last year's high of 1,350. The support and interest in the Society is amazing. On behalf of the Officers and Board we thank each one of you.

Some of you will be attend the Holiday Party on December 8. If you haven't sent in your reservations it is probably filled up. We are limited to 180. So if I don't see you, I wish all a Happy Thanksgiving, a Happy Hanukah, a Merry and Joyous Christmas and a Happy New Year. Our next meeting will be January 2, 2020.

Stay safe.

Thank you for all your support.

Dick Wiedhopf, President

Save These Dates for 2020

The Sonoran XIII Conference
Friday, April 24, and Saturday, April 25, 2020

Great Expectations for an Excellent Educational Weekend and More!
Speakers • Workshops • Vendor and Rescue Plant Sales
Silent Auction • Excellent Lunch and Dinner • Drinks • Lots of Fun and More!

We are looking for any ideas to improve this event and also asking for your help with planning and selecting workshops and much more.

Please contact me with your thoughts and also let me know if you would like to be on the Sonoran XIII Committee.

Vonn Watkins
cactusdude1@yahoo.com

FROM THE FLORILEGIUM

Before the murdered homecoming queen, the cherry pie, or the Black Lodge, FBI Special Agent Dale Cooper drove into Twin Peaks, Washington, and fell in love with the “big, majestic” Douglas-fir. This beautiful conifer is one of the three tallest trees in North America, after the two species of Sequoia, with some reaching nearly 400’ in height and a life span beyond 750 years. Trees harvested before reaching these impressive heights provide most of the wood for the construction industry, and its fast growth rate also makes it valuable to the Christmas tree industry.

Since its discovery, the tree has endured a dizzying taxonomic history. To begin with, Douglas-fir is not a fir tree (the genus *Abies*), as the hyphen in the name implies. It is in the genus *Pseudotsuga*, from the Latin “pseudo”, or “false”, and the Japanese “suga”, or “hemlock”, so it is not a hemlock, either. The path to its current scientific name has been a winding one. In 1803, it was *Pinus taxifolia*, “taxifolia” meaning with leaves similar to a yew (genus *Taxus*). In 1833, it was *Abies douglasii*; *Pseudotsuga douglasii*, in 1867; *Pseudotsuga taxifolia*; in 1889; and finally *Pseudotsuga menziesii*, in 1950. This is by no means a complete list.

Two Scottish botanists are commemorated in both the common and scientific names of the Douglas-fir. In 1792, Archibald Menzies collected the first specimens of the tree, on Vancouver Island, during the HMS Discovery’s five-year exploratory voyage under the command of Captain George Vancouver. In 1824, David Douglas, on an expedition for the London Horticultural Society, collected seeds of the tree along the Columbia River for cultivation in England.

Another twist in the Douglas-fir name game is the pronunciation of the species epithet. In Scotland, the name Menzies traditionally has been pronounced MING-iss, to rhyme with “sing”. Thus, the pronunciation of “menziesii” would be “MING-iss-ee-eye,” following the convention of retaining, as far as possible, the original pronunciation of the person’s name.



Pseudotsuga menziesii, Douglas-fir © 1979 Lucretia Breazeale Hamilton



Pseudotsuga menziesii, Douglas-fir
Pierre Mouillefert, *Traité des arbres et arbrissaux*,
Atlas (1892-1898)

Two varieties of Douglas-fir grow in the western United States. Coastal Douglas-fir, *Pseudotsuga menziesii* var. *menziesii*, grows in the coastal and inland Pacific Northwest, from California to Canada, while Rocky Mountain Douglas-fir, *Pseudotsuga menziesii* var. *glauca*, occurs in the dry interior mountains, from the Mexican border to Canada. The coastal variety is by far the largest, with the tallest documented tree measured at 393’, in 1924.

This pen-and-ink illustration of the Douglas-fir is one of Lucretia Hamilton’s unpublished drawings held by the University of Arizona Herbarium. In the drawing, note that the leaves, or needles, completely encircle the branch and occur singly, not in clusters as with pine trees. The downward-facing cone has distinctive bracts that extend beyond the scales of the cone. To the left of the cone is an enlarged bract attached to a scale.

The second illustration is from the French publication, *Traité des arbres et arbrissaux* (Treatise of trees and shrubs), by botanist and dendrologist Pierre Mouillefert. This illustration includes a fruiting branch with pendulous cones and their prominent bracts (center) and also a flowering branch (top right) with male flowers at the bottom left of the branch and female flowers at the top right.

Note that the bracts of the cones in both drawings resemble the tail and hind feet of a mouse. The tale of the mouse and the Douglas-fir is on the Florilegium Program’s website, along with several additional illustrations of the tree, including an excellent drawing by Charles Edward Faxon and a drawing by William Jackson Hooker, who somehow managed to invert the cones. A link is on our home page (<https://art-botanical.org/>).

TCSS BOARD

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Cactus Rescue: Donna Ellis
cactus@Tucsoncactus.org

Education: Laurie Naugle • education@Tucsoncactus.org

Free Plants: Donna Ellis • plants@Tucsoncactus.org

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trips@Tucsoncactus.org

Vendor Coordinator: Dale Johnson • vendors@tucsoncactus.org

Plant Sales: Linda Heisley • sales@tucsoncactus.org

Field Guide Sales: Susan Durham & John Durham
books@tucsoncactus.org

Conservation: Thomas Staudt
conservation@tucsoncactus.org

Newsletter Editor: Karen Keller • runbunny@cox.net

Deadline for newsletter text or photos:
Monday, December 16, 2019

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
456 Rescues - 35,969 Volunteer Hours (updated 10/21/19)

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.

December 2019

Sunday, December 8, 2019 at 3:00pm

Tucson Cactus and Succulent Society

Holiday Party & Gift Exchange

Sky Islands Public High School

6000 E. 14th Street, Tucson, Arizona

Tuesday, December 10, 2019 at 7:00 pm

Board meeting, Ward 3 Council office at

1510 E Grant Rd. 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.

Pima Prickly Park

Catherine Robson

Conservation

Kirk Emerson

In Memory of Jane Kismet Taner Harris

Wayne Stengel

In Memory of Peter Hubbell

Patricia & Richard Wiedhopf