



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society January 2018

Thursday, January 4, 2018 at 7:00 pm

## Where Did I Go Wrong

Presented by Chuck Hanson



Come with me on a three-month safari to East Africa of the 1960's. Although much of the area looks like SE Arizona, it is (was) populated by an amazing and diverse megafauna. The safari is mostly in the savannahs of Kenya

and Tanzania, but we also go north into the vast desert area of northern Kenya to join the Royal Geographical Society's Turkana Expedition. A safari such as this will never be possible again, for reasons you will soon see!

### Curriculum Vitae for Chuck Hanson

- 1950-'51 US Air Force, Korea.
- 1952-'56 Virginia Tech, BSc in Zoology.
- 1957-'59 National Science Foundation Scholarship, Ohio State University, MSc in Zoology.
- 1959-'60 Ohio Division of Wildlife, Upland Game Biologist.

- 1960-'64 Naturalist, U. S. Forest Service, Coronado National Forest.
- 1965-'69 Naturalist, Tucson School District 1.
- 1969 3 months in East Africa.
- 1969-'78 Curator of Large Animals, ASDM.
- 1978-2007 Founded and ran Arid Lands Greenhouses. Made numerous trips to Africa, Madagascar and Asia studying succulents in habitat.
- 1993-'95 President, Tucson Cactus and Succulent Society.
- 2008-'12 Lived in Ecuador, studied native cacti, succulents and orchids.
- 2013 Retired to Sonoita, Arizona

I want to welcome everyone to our introductory program for 2018. Please come and enjoy a marvelous presentation, have some refreshments, meet and talk with friends, take home some plant giveaways and accept great raffle plants. Also, be sure to take a free TCSS plant provided as you leave for the evening.



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

**Thursday, February 1, 2018 at 7:00pm**  
 Lessons from Tortilla Flats or No Species is an Island  
 Presented by Ted Fleming

## 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

We end 2017 on a high note. We had our largest Holiday Party with over 160 members, family members and guests in attendance. Three members were awarded the President's Service Award.

Peter Ertman for his outstanding work on recording speakers at regular meeting and making their

presentation available online to all members.

Roger Salzgeber for his commitment to the rescue program and volunteer work and Pima Prickly Park providing equipment and technical skills to enhance these activities.

Jim Bliss who uses his technical skills and artistic touch enhances areas of Pima Prickly Park with rock work that prevents erosion and creates an artistic rock scape.

You elected 4 board members (3 year terms ending December 31, 2020) and the Cactus & Succulent Society of America (CSSA) representative for a 2 year term ending December 31, 2019.

### Elected Board Members:

Steve Chesser  
Donna Ellis  
Bill Salisbury  
Kris Thompson  
CSSA Representative -  
Bill Holcombe

The turkey, ham and shrimp were great as well as the dishes brought by members. Everyone received a plant and the gift exchange was enjoyed by all.

We also collected \$500 and food for the Community Food Bank.

This will be a busy year including the Sonoran XII conference on April 28, 29. This is always a very special event that includes a great show, plant, pottery, rescued cactus for sale, workshops, speakers, lunches and a special dinner. The complete schedule will be available in February. You will be able to register for the entire event of individual activities.

Donations, membership renewals and new members have been coming in at a fast pace and we are a little behind. Don't be concerned everyone will be welcome at all events.

Pima Prickly Park is better and better each week with lots of new plants in place each week.

This message below was part of an email from the Desert Botanical Gardens. It is of concern to all non-profits. Your donations are important to TCSS no matter the amount. It makes a lot of activities possible. So, please read and think about how much your dollars mean to us and every other non-profit.

"The Tax Cuts and Jobs Act provides for several new lower tax rates, nearly doubles the standard deduction, eliminates personal exemptions and almost all itemized deductions. Although the legislation maintains the current-law for income tax charitable deduction, it will significantly reduce the number of taxpayers who itemize and effectively eliminate the income tax charitable deduction for a vast majority of Americans."

Thank you for your support.

Dick Wiedhopf, President

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## PIMA PRICKLY PARK



### DID YOU KNOW?

It has been such a pleasure to interview members of TCSS who have contributed their time, energy, and talents to the on-going development of Pima Prickly Park. Cathy Robson, who is also a Master Gardener, is one of those amazing volunteers!

Cathy shared the following:

I was lucky to be raised in a traditional household with two sisters. My father was in the Air Force, and we were raised in Northern Virginia. To this day, seeing a dogwood, forsythia, or azalea reminds me of home. On weekends, my father would rise early, go to the local nursery, buy plants, and be outside working in the soil. It was his favorite thing to do; I credit my father for my knowledge and interest of gardening.

I studied Biology in College for a couple years, then moved into my first apartment, which had "patches of soil" for everyone to enjoy. This began my 25-year interest in vegetable gardening. As the years progressed, I went from a 3'x6' space to a 30'x125'

area. We moved to Arizona in 1985 where my vegetable gardens were about 20'x20'. Gardening in Tucson brought new challenges, so I read and re-read George Brookbank's Desert Gardening Fruits & Vegetables and followed all his advice. The result produced fantastic vegetables and unlimited knowledge.

In 2004 I was accepted to and attended the Master Gardener class through the University of Arizona, Pima County Cooperative Extension. What an amazing educational opportunity. To this day, I reflect on the knowledge and gardening experience I received at the gardens near Campbell and River. As expected, my first Master Gardener garden was to volunteer at the vegetable garden. I also gardened in the xeriscape, cactus and succulent, and propagation areas. I found that I enjoyed the native plants and the information gained on how to propagate cacti.

In 2002, my husband and I moved to a newly developed home in Oro Valley. The lot is about 1/2 acre, and I asked the builder not to destroy any native plants. So, I was surprised when half the lot was dirt with two old prickly pears. There was a

*Continued on inside back page*

## FROM THE FLORILEGIUM

One of 2017's events celebrating Sir Joseph Dalton Hooker's bicentenary (November 2017 *Desert Breeze*) was an exhibition at London's Kew Gardens of works by 80 contemporary British botanical artists. Perhaps the most striking work on exhibit was a near life-size watercolor of *Amorphophallus titanum* created by three botanical artists painting in tandem. In the summer of 2017, the titan arum at the Royal Botanic Garden Edinburgh bloomed for the second time in two years. During its 3-day blooming period, the three artists worked—in spite of the flower's stench—to create a triptych (nearly 9 feet in height) showing the three stages of the plant's inflorescence. The artists, Jacqui Pestell, Sharon Tingey, and Işık Güner, are tutors in the RBGE's botanical illustration course. (See the link below to view their paintings of the titan arum.)

The first titan arum to bloom at Kew Gardens was in June of 1889, having been given to Joseph Hooker as a small seedling ten years earlier. The inflorescence began to emerge in early June, and, growing at a rate of about 3 inches a day, it reached its full height of 6'9" seventeen days later. Hooker described the event in Curtis's *Botanical Magazine*:

"Unfortunately the flowering stage was so rapid that it was witnessed by few, and by them at the expense of enduring an atrocious stench, resembling that of *Bulbophyllum Beccarii*, which rendered the tropical Orchid house at Kew unendurable during its flowering in 1881. I should be wanting in gratitude if I did not here express my deep obligation to the talented artist of this work (Miss Smith), who, in her efforts to do justice by her pencil to these plants, suffered in each case a prolonged martyrdom that terminated in illness in the case of the orchid."

The long-suffering "Miss Smith" was Matilda Smith (1854–1926), Hooker's second cousin and prolific illustrator of *Curtis's Botanical Magazine*. While the titan was in bloom, Smith completed three paintings of the plant that were published in the magazine in 1891.

Also growing in one of Kew's greenhouses was a saguaro. Smith was the first artist to paint a complete botanical illustration of the saguaro (June 2013 *Desert Breeze*). The fourteen-foot tall specimen flowered for the first time in July 1891, allowing Smith to include the flowers in her illustration.

Her career as a botanical illustrator was largely a result of a disagreement, in 1877, between Hooker and Walter Hood Fitch, Kew's renowned artist and illustrator of Hooker's many works. After Fitch's departure, Hooker brought Smith to Kew to train her as a botanical artist, and her first work was published in the magazine the following year. Fitch's nephew, John Nugent Fitch, provided the lithography for many of Smith's paintings. From 1887 to 1920, she produced over 2,300 illustrations for the magazine, in addition to 1,500 illustrations for Hooker's *Icones Plantarum*. In 1898, Smith became the first official artist of Kew Gardens. She retired in 1920, and her final illustration for the *Botanical Magazine* appeared in 1923.

The genus *Smithiantha* in the Gesneriad family, was named in honor of Smith by Otto Kuntze, and the genus *Smithiella* (now *Pilea*) was also named for her by Stephen Troyte Dunn, one of

Kew's botanists. Dunn wrote in his 1920 dedication:

"This genus is respectfully dedicated to Miss Matilda Smith, and the specific name of the first species [*Smithiella myriantha*] not inappropriately refers to its innumerable flowers as well as to the very large number of beautiful drawings and paintings of flowers with which Miss Smith has for so many years decorated the *Botanical Magazine*, the *Icones Plantarum* and the *Kew Bulletin*."

Smith was chosen to design a portion of Joseph Dalton Hooker's monument wall tablet that hangs in St. Anne's Church near Kew Gardens. The five gracefully drawn plants, including a pitcher plant, a rhododendron, and an aristolochia, encircle an image of Hooker.

**LINKS:** The RBGE artists videotaped their painting sessions of the *Amorphophallus titanum* triptych. Here is a link to a Vimeo gallery that includes not only brief videos of the three different paintings in progress but also videos of the RBGE titan arum in bloom: [vimeo.com/album/4694962/](https://vimeo.com/album/4694962/)

Additional works by Matilda Smith, including a photograph of the her design for the plants on Hooker's monument tablet as well as the three paintings of the titan arum, can be found through the home page of the Florilegium Program's website ([www.art-botanical.org](http://www.art-botanical.org)).



*Amorphophallus titanum*, Titan arum  
Painting by Matilda Smith, Lithograph by J.N. Fitch  
*Curtis's Botanical Magazine*, Vol. 117, 1891

## Acknowledgement of Contributions

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

### Florilegium

Anonymous  
Matthew B Johnson & Patricia A Rorabaugh  
Ralf Holzheu  
Chris Bondante & Family  
John Gilkey & Laurel Cooper  
Carol Owens  
Dick & Sue Hildreth  
Margaret Pope & Family  
Carl Englander & Paula Borchardt  
Barbara Walker & Phil Feigin  
Patricia H Waterfall

### Conservation

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Constance Elson  
Val L Little  
Mark Nall  
Patricia H Waterfal  
Linda Kappel  
Judith Goodrode & Bob Zugar  
Jean Rlewis & Gerald A Daharsh  
Richard Poppy & Juliana Rose Teal  
Mark Mason  
Douglas Williams & Family  
Teresa Brubaker  
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Stephan Baier & Family  
David Yetman  
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Thomas Pringle  
Barbara Walker & Phil Feigin

### Research

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Barbara Walker & Phil Feigin  
Paul Myrdal  
John & Ann Tundermann  
Adora-Marie Higgins & Allan Honda  
Vonn Watkins

### Education

George & Emojean Girard  
Dennis Murphy & Nancy Beck  
John J Ross  
Yvonne Stokes  
Jennifer Walker  
Richard Ryan  
Sylvia Simpson  
Christina Frazer  
Haden, Averie, Patrick & Liz Gaudet  
Lorraine Mcpherson & Bruce Fulton

Susanna & Lucas Schippers  
Matthew B Johnson  
& Patricia A Rorabaugh  
Helga Egertson

### Publications

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Lindsey & Barry Abrahams  
Constance Elson  
Val L. Little  
Mark Nall  
Patricia H Waterfall  
Marie Hirsch

### Unrestricted General Fund

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Dean & Jenny Brick  
Connie Engard  
Phyllis Killeen  
Don & Maribeth Morehart  
Martha & Abby Taylor  
Colette M. Altaffer  
William Thornton  
Helen Barber  
Monty & Karen Turner  
David Yetman

### Pima Prickly Park

Ralf Holzheu  
John Gilkey & Laurel Cooper  
Joe Bacik  
Linda E. Ryan  
Cheryl Bullard  
Anu Pundari  
Monty & Karen Turner  
Cathy Elias, Naheli & Ellis Cabezas  
Monica Wnuk  
Marian Alaback  
David A Palzkill  
Edith Jane & Richard Ulmer  
Kristine Klewin & Family  
Ray & Pat Merritt  
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Cathy & Jon Robson  
Joy Phoenix & Leslie Daggy  
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Lynn Mcevers Andrews & Family  
Russ & Chris Freeman  
Martha & Steve Goode  
Curtis & Beth Hamann  
Linda Heisley  
Dianne Maki-Sethi & Ravi Sethi  
David Moyer & Eileen Jarrett  
Chuck Huckelberry & Family  
Vonn Watkins  
Richard Wiedhopf  
Steven Schmidt & Family  
Douglas Williams & Family

Continued from page 2

reason for this, so I found out, but in any case, I had to do something and decided to join TCSS's Rescue Team. It takes a lot of plants to fill 1/4 acre; this seemed like the best way to go.

As a new TCSS member, I went on a few rescues and planted the saguaros, hedgehogs, and barrels in the Outback (an area outside our wall). I attended monthly meetings and became aware of Pima Prickly Park. This was perfect for my interest in native plants, and for using the propagation knowledge learned with the Master Gardeners. I asked Linda Heisley if I could manage the Hoop House; she agreed, and I have been there for the past five years. The Hoop House takes in rescued and donated plants for planting into the Park. I enjoy my volunteer hours working with the plants and watching them grow large enough for planting in the Park. The Park's tough environment taught us many things.

The changes in the Park are astounding as well as those in the Hoop House. New systems are tried out to help with challenges of all sorts. As with all Tucson gardeners, we fight the heat, cold, dry soil, lack of irrigation, and critters. We learn and continue. I would encourage anyone interested in volunteering to "Adopt a Patch" at Prickly Park. You will enjoy the gratification and fun times with other volunteers.

I have been honored to have both my Tucson residence yards featured in the Arizona Daily Star. In 1991, our first yard was featured in an article entitled "Backyard Oasis." It spoke about the creation of three zones: vegetable garden, a green area with grass and waterfall, and pool/spa with ramada. Our second yard was on the 2010 Master Gardener Tour and a TCSS Home Tour.

Besides working for 25 years with real estate investors and attorneys and being a licensed real estate agent, my husband

and I volunteered at the Southern Arizona Humane Society by fostering over 65 kittens. What a blast this was, until we had to turn them in for adoption when they were about 10 weeks old. They were too cute, and although all were adopted out quickly, we wanted to keep each one of them.

My favorite day of the week is Thursdays when I volunteer at Pima Prickly Park. I get to put my boots on, get soil under the nails, dirt all over, enjoy the company of others, and get satisfaction for helping a great organization and cause.

### NATURAL FIREBREAK

The Lilac Fire in California has been devastating. If you are concerned about the possibility of wildfires near your home, please refer to Debra Lee Baldwin's article and video on succulents as firebreak. (dib@debraleebaldwin.com)

Debra shares that by planting fleshy-leaved, moisture-rich plants such as agaves, elephant's foot, aeoniums, aloes, jade, and "Sticks on Fire" you may be planting a natural firebreak.

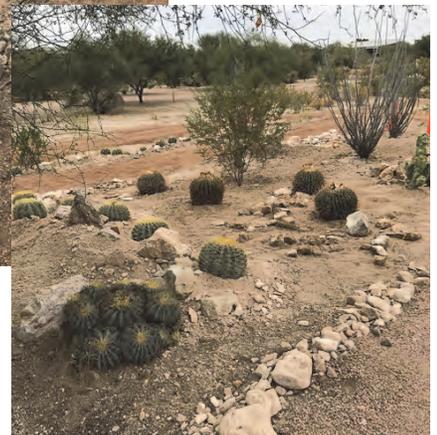
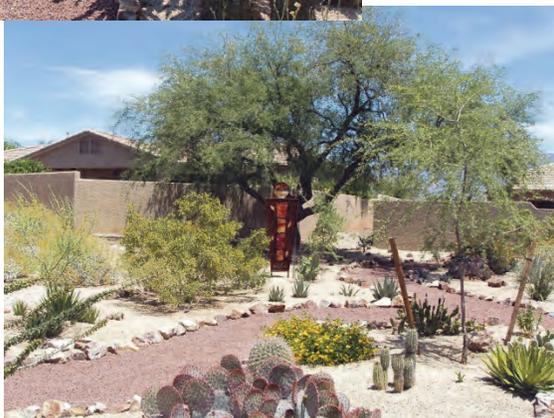
### FROM THE PARK: WHAT'S NEW

The development of the Ferocactus Garden began in early December.

Paths have been made and more than 50 specimens have been planted.

### NOTE:

A new year awaits us  
With opportunities galore:  
From planting to watering  
And so very much more!  
Ferocactus are beckoning.  
The Hoop House is too.  
Come join us at last.  
They are waiting for YOU!  
-----Cari Wright"





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

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

**TCSS Club Members receive a 10% discount**

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

## January 2018

**Thursday, January 4, 2018 7:00pm**

"Where Did I Go Wrong"

Presented by Chuck Hanson

**Tuesday January 9, 2018 at 7:00 pm**

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

## A Beautiful Cholla to end 2017



©karen keller 2017

### TCSS BOARD

#### Officers

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

**Secretary:** Susan Durham  
[secretary@Tucsoncactus.org](mailto:secretary@Tucsoncactus.org)

**Treasurer:** Linda Bartlett  
[treasurer@Tucsoncactus.org](mailto:treasurer@Tucsoncactus.org)

#### Board of Directors:

[board@Tucsoncactus.org](mailto:board@Tucsoncactus.org)

(terms expire December 31 of year indicated)

Steve Chesser (2020)

Donna Ellis (2020)

Bill Salisbury (2020)

Kris Thompson (2020)

Teresa Curtis (2019)

Peter Ertman (2019)

Don Morehart (2019)

Thomas Staudt (2019)

Keimpe Bronkhorst (2018)

John Durham (2018)

Linda Heisley (2018)

Dale Johnson (2018)

#### CSSA Affiliate Rep:

Bill Holcombe (2019)

**Cactus Rescue:** Donna Ellis  
[cactus@Tucsoncactus.org](mailto:cactus@Tucsoncactus.org)

**Education:** Caryl Jones • [education@Tucsoncactus.org](mailto:education@Tucsoncactus.org)

**Free Plants:** Donna Ellis • [plants@Tucsoncactus.org](mailto:plants@Tucsoncactus.org)

**Floilegium:** Margaret Pope • [art@Tucsoncactus.org](mailto:art@Tucsoncactus.org)

**Librarian:** Joie Giunta • [librarian@Tucsoncactus.org](mailto:librarian@Tucsoncactus.org)

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**Refreshments:** Patsy Frannea • [refreshments@Tucsoncactus.org](mailto:refreshments@Tucsoncactus.org)

**Technology:** [technology@Tucsoncactus.org](mailto:technology@Tucsoncactus.org)

**Research:** Doug Rowsell • [research@Tucsoncactus.org](mailto:research@Tucsoncactus.org)

**Garden Tours:** Bill Salisbury • [tours@Tucsoncactus.org](mailto:tours@Tucsoncactus.org)

**Field Trips/tours** Rob Romero/Joie Guinta

[trips@Tucsoncactus.org](mailto:trips@Tucsoncactus.org)

**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Saturday, January 20, 2018**

#### TCSS Web Page:

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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.



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

February 2018

Thursday, February 1, 2018 at 7:00pm

## Lessons from Tortilla Flats or No Species is an Island

Presented by Ted Fleming

In this talk I will briefly discuss our 11-yr research program on the pollination biology of four species of Sonoran Desert columnar cacti that we conducted at Bahia de Kino, Sonora, Mexico. My recent book 'No Species is an Island' (University of Arizona Press, 2017) summarizes our major findings, and I will highlight these with readings from the book. I will use illustrations from the book and my photographs to support our research results.

I have been a professional biologist for over 50 years. For most of my career I have studied ecological interactions between seed- and/or pollen-dispersing phyllostomid bats and their food plants in Latin America. My seed dispersal studies were conducted in tropical forests in Costa Rica between 1970 and 1986. My pollen dispersal studies were conducted in the Sonoran Desert of Mexico and Arizona between 1989 and 2000; my graduate students conducted parallel studies in Curacao, Venezuela, and Peru. My students and I studied the evolution of phyllostomid bats in the West Indies between 2000 and 2006. My current research involves the use of hummingbird feeders by nectar bats in southern Arizona.

I have been professionally employed by the Smithsonian Institution (1966-67), the University of Missouri-St. Louis (1969-78), and the University of Miami (1978-2008). I directed the theses or dissertations of 22 graduate students and have won several national awards for my research. I was associated with the Association for Tropical Biology and Conservation (ATBC) for many years and served as its president in 2001. I have authored/co-authored over 150 publications and eight books, including

"The Ornaments of Life: Coevolution and Conservation in the Tropics (University of Chicago Press, 2013; co-authored with W. John Kress) and "No Species is an Island: Bats, Cacti, and Sonoran Desert Secrets" (University of Arizona Press, 2017). I retired from the U of Miami in 2008. My wife and I live in Tucson, AZ near our daughter and her family.

I've always had an interest in art and have used photography as a creative outlet for this for many years. I've become deeply involved in digital photography and digital art in retirement.



Continued on page 1



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

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

Thursday, March 1, 2018 at 7:00pm

Rooted in the Islands: Documenting changes in the perennial flora of the archipelago of Bahia de Los Angeles, Mexico

Presented by Sula Vanderplank

## 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!

Continued from Cover

I've enjoyed being a member of Club Camera Tucson and served as its president in 2010-12. My photo website is: [www.tedflemingphotography.com](http://www.tedflemingphotography.com)

Please come and enjoy this special program presentation, have some refreshments, meet and talk with friends, take home some plant giveaways and more. Also, be sure to take a free TCSS plant provided for those who stay until our closing.

The Strange Sex Life of Cardon | 19

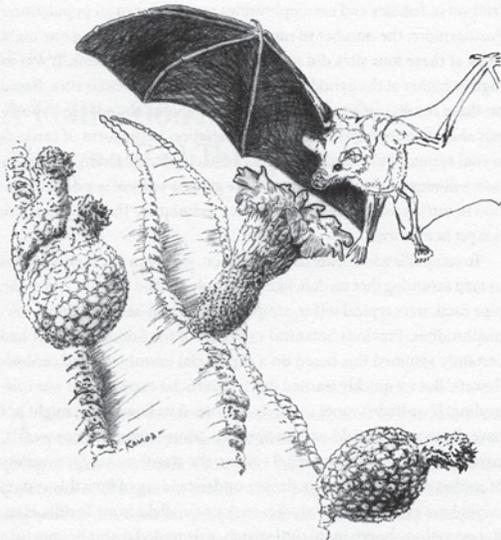


Figure 5. Lesser long-nosed bat visiting a cardon flower and developing cardon fruits postpollination.

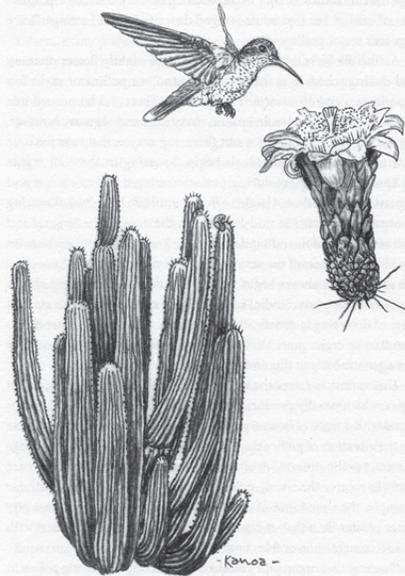


Figure 6. An organ pipe plant with a flower being visited by a female broad-billed hummingbird.

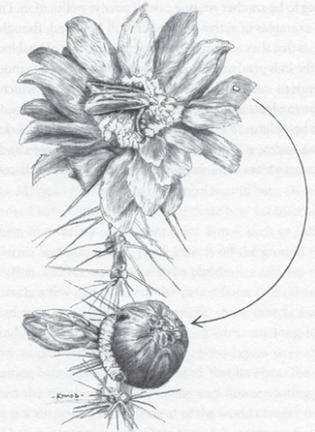


Figure 9. The senita moth life cycle showing the adult moth and an egg (top) and a fruit with a larva (bottom).



### President's Message

Thank you for renewing your membership. More than 900 have done so and should have received your updated membership cards, badges if needed and Cactus Bucks for your rescue efforts. This will be a busy year with lots of opportunity to learn and do.

In this newsletter is the financial report of the society. It is not an audited financial statement but a true statement of our financial position for 2017. As you can see, membership fees cover less than 30% of our activities. That means we have to raise funds from other sources. We are extremely fortunate that so many of you support this Society with donations, work hard at Rescues and sales and special activities like the Field Guide. This makes it possible to have great speakers at meetings, educational activities, Pima Prickly Park, Sonoran Conferences etc. These are not money makers but are essential to meet our goals and maintain our tax-exempt status. Your support is really appreciated.

Also in this newsletter is the first article about Sansevierias (mother-in-laws tongue) and our affiliation with that society whose leadership now resides in Tucson. These are really interesting succulent plants that are gaining in popularity for their ease of growth and interesting shapes and sizes. New species are being discovered which is always exciting. There are also many hybrids and variegates to choose from. I have been adding these plants to my collections and learning how best to grow them. If you forget to water them they say "thank you".

You hear stories about large Queens of the Night (*Peniocereus greggii*) but to find and dig one up is a different story. Donna and Robert Ellis and I had the opportunity to rescue a small area that was to be blades ASAP. There would not be very many plants available so the three of us were enough. We found some very nice *mammillaria grahamii* and a couple of barrels that were available and then we saw a queen growing in a large creosote bush. The soil was very soft and to our amazement the tuber of the queen was quite large. We of course, started searching every clump of creosote. I found a 15lb tuber and Robert dug a 24lb tuber. Wow! That's all I can say. The 24 pounder will be at the meeting as a special raffle and the others are being potted and will be available at Sonoran XII.

We have been expanding and planting the Cholla maze and Monrad Ferocactus Garden at Pima Prickly Park. They are really taking shape and looking good. The park is truly a cooperative effort between Pima County and TCSS. I hope that everyone who comes out to the Park realizes how well government and non-profits can work together for the benefit of the community. Many of you indicated that you would like to help out and your interest has been forwarded to Linda Heisley who coordinates the volunteers. I am sure you will be hearing from her.

This will be a great year and I thank you for your support.

Dick Wiedhopf, President

# FROM THE FLORILEGIUM

Here are updates on two of the Florilegium Program's botanical art projects.

## The Sonoran Desert Florilegium:

The Florilegium now includes 80 works of botanical art, representing 74 species, by 15 artists. Anyone unfamiliar with the digital Florilegium or florilegia in general can read about the project in the October 2014 Desert Breeze or on our website ([www.sonorandesertflorilegium.org](http://www.sonorandesertflorilegium.org)).

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

The home page of the Florilegium Program's website has a quick link to the Florilegium's 'Browse' option.

## The Legumes of Arizona:

Included in the 80 works accepted into the Florilegium are 23 botanical illustrations that were prepared for *Legumes of Arizona: An Illustrated Flora and Reference*, the eagerly anticipated publication by the University of Arizona's Desert Legume Program. The book is expected to be published in 2018. It will include nearly 120 botanical illustrations by 30 artists from the Tucson, Phoenix, and Denver areas.

The botanical illustration included here was drawn by Margaret Pope for *Legumes of Arizona*. For many months now, Margaret has put aside her colored pencils to concentrate on several pen and ink illustrations of legume species, one of which is *Haematoxylum brasiletto*.

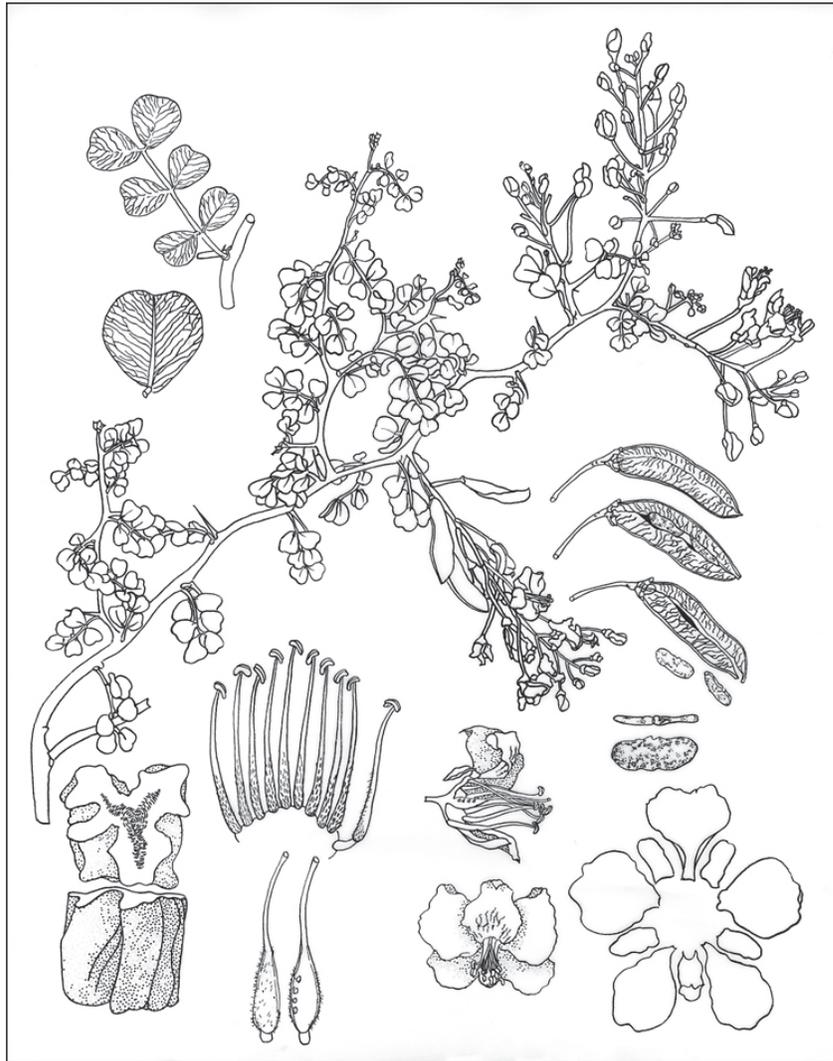
Known commonly as brazilwood, this small, densely-branched tree ranges from Venezuela and Columbia north to Sonora and Baja. When in bloom, the tree is a mass of color—gray-green bark, clusters of bright yellow flowers, and young seed pods of a striking copper color.

As the tree grows, it develops a beautiful, deeply fluted trunk. At the center of that trunk is the dark red heartwood. (See the lower left corner of Margaret's drawing for an illustration of the trunk's fluting and heartwood). The vivid red solution that results from soaking pieces of the heartwood has been used traditionally as a dye for fabrics. Brazilwood has also been used medicinally for treating a wide range of ailments.

*Haematoxylum brasiletto* was first described by Hermann Karsten (1817-1908), a German botanist and geologist who made extensive collections in South America. From 1843-1847 and again from 1848-1856, he collected plants and fossils in Columbia, Ecuador, and Venezuela. He devoted considerable time studying the geology of Venezuela and mapping its various regions. It was during his second trip that he collected specimens of *Haematoxylum brasiletto* in

northern Columbia. Upon return to Germany, he published *Florae Columbiae* (1859-1869), a flora of the plants he had collected in South America. The two-volume work is illustrated with 200 superb watercolors.

A link to the colored illustration of *Haematoxylum brasiletto* from *Florae Columbiae* can be found through the home page of the



*Haematoxylum brasiletto*, Brazilwood, © 2017 Margaret Pope, Pen and Ink

# Sansevieria, the Forgotten Succulent

Most people know the succulent plant commonly called “mother-in-law’s tongue” or “snake plant,” *Sansevieria trifasciata*. However, there are 70-80 described species of *sansevieria*, and many more cultivars and hybrids. There are also new species being discovered and described each year. *Sansevierias* are native to Africa and Asia, but can be found growing in gardens or as invasive plants in many other parts of the world today.

*Sansevierias* are succulent plants with species ranging from tender flat-leaved types, to thick, round spike-leaved varieties. Some will variegate with yellow or white streaks or stripes. *Sansevierias* grow well in the desert if given the proper care, and a number of species can be cultivated in the ground in outside gardens in Tucson. They also make for excellent, durable houseplants, or potted porch and patio plants. Some species are striking in their architectural beauty, the perfect attraction for modernist or minimalist indoor decoration, or outdoor landscapes.

*Sansevierias* spread by root-like rhizomes. Sometimes these are underground, or sometimes they grow out like a shoot from a spider plant. The rhizomes of some species are so powerful they will easily break a plastic or clay pot. The new offset plants can be separated from the mother plant by cutting the rhizome. *Sansevierias* do develop fruit and seed, also, but sprout and develop very slowly. They can also be propagated from leaf cuttings. Some species progress through a juvenile stage before reaching maturity, a process which can take years.

*Sansevierias* should be planted in a well-drained soil mixture of organic and inorganic material. Perlite, pumice, lava rock, or gravel should be added to garden potting soil. Water *sansevierias* sparingly in the winter (November through March) not more than once a month, because this is the dormant

period. During the summer, *sansevierias* can be watered once a week or even more frequently when it is hot and dry. The most common reason *sansevierias* die is due to over watering during dormancy. Make sure the soil is dry before watering again otherwise the plant may rot. Most varieties are happy to go weeks or even months without water. Fertilize during the summer months, or use time-released pellets.

*Sansevierias* tolerate temperatures down to near freezing if they are kept dry. If the soil is wet, or the temperature dips below freezing, bring the plant inside, or cover it with frost cloth, or a dry bed sheet or blanket. *Sansevierias* do well in bright or moderate light, but will burn in the direct sunlight in Arizona, so grow them on a porch or in a partially shaded location. They will also tolerate low light situations indoors, but will grow very slowly under this condition.

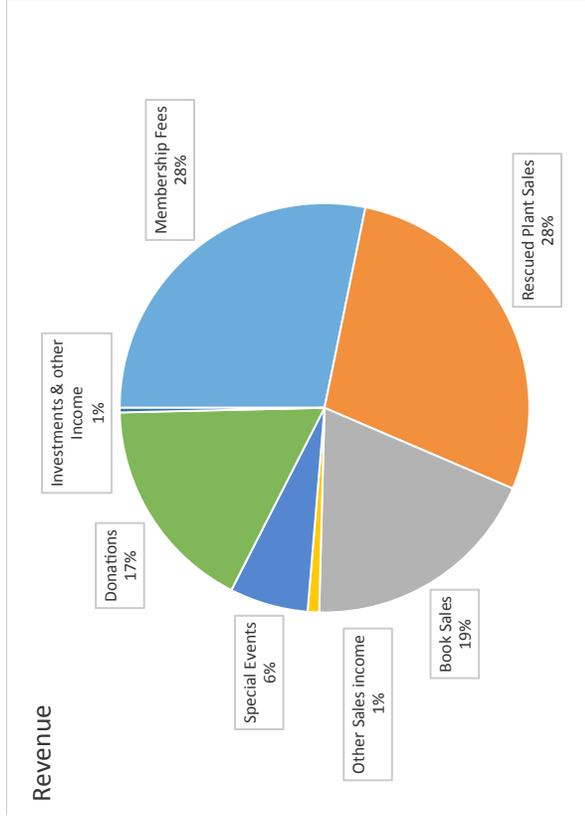
*Sansevierias* do flower in three types of forms depending on the species - a long spike, a ball or head, or a candelabra. The small, orchid-like flowers are typically white or cream-colored, but sometimes have a pinkish or purplish cast. The aroma is strongest at night, and can be powerfully intoxicating. Some species flower quite readily, while others can literally take ten years or more to develop an inflorescence.

The International *Sansevieria* Society (ISS) is based here in Tucson, and is now affiliated with the Tucson Cactus and Succulent Society. For more information on the ISS visit [www.sansevieria-international.org](http://www.sansevieria-international.org) The journal, *Sansevieria*, is published by the ISS.

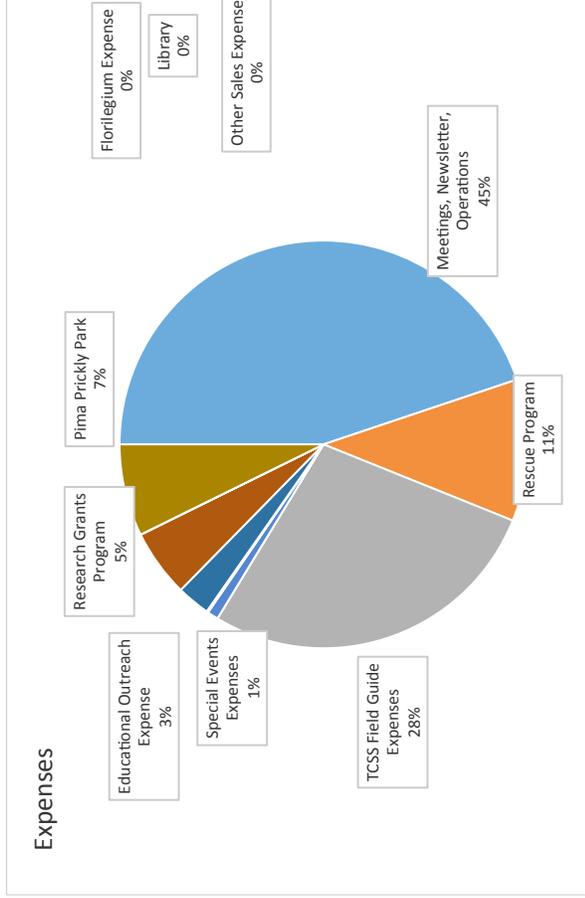
If you would like to grow species of *sansevierias*, or if you have any questions, please feel free contact me, **Alan Myklebust at (520) 982-4327, or email at [mykle@dakotacom.net](mailto:mykle@dakotacom.net) , or contact Robert Webb at Arid Lands Greenhouses here in Tucson.**



REVENUE	
Membership Fees	\$ 20,764.00
Rescued Plant Sales	\$ 20,788.00
Book Sales	\$ 13,959.00
Other Sales income	\$ 667.00
Special Events	\$ 4,558.00
Donations	\$ 12,606.00
Investments & other Income	\$ 265.00
<b>TOTAL</b>	<b>\$ 73,607.00</b>
Beginning Cash Assets 1-1-2017	\$ 106,537.00
Ending Cash Assets 12-31-2017	\$ 93,400.00
Inventory (Field Guides, Rescue Plants, other) est,	\$ 35,000.00



EXPENSES	
Meetings, Newsletter, Operations	\$ 38,574.00
Rescue Program	\$ 9,675.00
TCSS Field Guide Expenses	\$ 23,748.00
Other Sales Expense	\$ -
Special Events Expenses	\$ 748.00
Library	\$ 112.00
Educational Outreach Expense	\$ 2,265.00
Research Grants Program	\$ 4,600.00
Florilegium Expense	\$ 14.00
Pima Prickly Park	\$ 6,274.00
<b>Total</b>	<b>\$ 86,010.00</b>



# PIMA PRICKLY PARK



## DID YOU KNOW?

As “Cub Reporter” for Pima Prickly Park, I am forever amazed by the backgrounds and “life paths” which have led our staff, members and volunteers to TCSS and PPP. With no exception, I recently interviewed member Jessie Byrd, Pima County Native Plant Nursery Manager.

Note: Jessie drew the conceptual plans for Pima Prickly Park. She shared that she did not know then that she was drawing a picture of her very own future!

Jessie is indeed a Tucson “native.” She attended Bryn Mawr College in Pennsylvania studying biology and spent most summers here in Tucson. Her first job out of college was working for the New York City Parks Department. She eventually returned to Tucson to pursue her Masters in Landscape Architecture at the University of Arizona. It was during this time that she experienced her first cactus rescue: “The plant was an *Escobaria vivipara*. It was a really cool plant....Dick (Wiedhopf) was so generous and sharing...he let me dig it up! To have that experience led me to my present day occupation.”



Jessie is passionate about *Peniocereus greggii*, night blooming cereus----“Queen of the Night”. She says they are so tender but yet so resilient. She finds great joy participating in their rescues and feels that she has dug up more than anyone else in the world! She shared that the biggest one rescued was 35 pounds found at the side of Cortaro Farms Road. The largest she has seen was at her grandparents’ home, salvaged in Ajo in the 60’s and brought back to Tucson. This “Ancestral Queen” is about 50 pounds and now planted in Jessie’s yard!

As the Pima County Native Plant Nursery Manager,

Jessie needs plants for inventory. Rescued plants from Pima County development sites are not only kept at the nursery, but also are handed off to the park.---a great partnership. (For more information a video is available at [tucsoncactus.org](http://tucsoncactus.org) under section for Current News...Video and story about the park.)

Jessie not only manages the Native Plant Nursery, she also gives educational tours and classes for school groups on site and in the park. She radiates enthusiasm and her passion for the desert and native plants is wonderfully contagious!

....On a more personal note....Jessie finds great joy in traveling and sampling exotic foods. She recently explored Cusco, Peru where she enjoyed guinea pig!

Cari Wright

## FROM THE PARK: WHAT'S NEW

From Linda Heisley:

- Visitors from the Phoenix Botanical Gardens recently toured the park and were impressed by the beautiful rock work.
- A “mystery critter” dug a 2x2 foot hole at the top of the Hummingbird Garden.....hmmmm...badger ?
- Many thanks to Gene Murphy for his continued donation of plants from his yard to PPP.
- THANK YOU Pima County for the ongoing support with plants, soil and great exposure of the park to the community.

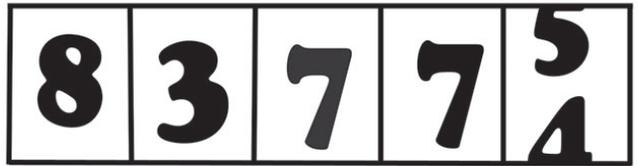
## DO YOU WANT A 24LB QUEEN OF THE NIGHT?

We have that rescued Queen to raffle off at our February 1, meeting. We will be selling tickets at \$5.00 each for a chance to own this plant. The tickets will go on sale at the break. Our friends at TANK'S are donating 20 bags of their cactus mix which will go to the first 20 Queen raffle ticket purchasers (limit 1/person).



## Sonoran XII - April 27, 28 & 29, 2018

This is just an update as to some of our speakers and workshops. Completed schedules will be in the March newsletter. Our list of speakers will include, Dr Rob Wallace, Bill Peachey, Michelle Cloud-Hughes and Andrea Ramon. Our workshops will feature, Ernesto Sandoval, Scott Calhoun, Keith Burkhard, Jim Hastings, Starr Urbatsch and Bill Peachey.



**Cacti Rescued - Since 1999**  
**392 Rescues - 30,446 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## February 2018

**Thursday, February 1, 2018 at 7:00pm**

"Lessons from Tortilla Flats or No Species is an Island"  
Presented by Ted Fleming

**Tuesday February 13, 2018 at 7:00 pm**

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

## Acknowledgement of Contributions

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

### Education

Jerry & Colette Price  
Dale & Augie Johnson  
Jan & Pat Konstanty

### Conservation

Jerry & Colette Price  
Jan & Pat Konstanty  
Sandi Kilkuts & Family

### PimaPrickly Park

Betty Smith

### TCSS BOARD

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**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

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**Garden Tours:** Bill Salisbury • [tours@Tucsoncactus.org](mailto:tours@Tucsoncactus.org)

**Field Trips/tours** Rob Romero/Joie Guinta  
[trips@Tucsoncactus.org](mailto:trips@Tucsoncactus.org)

**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Saturday, February 17, 2018**

**TCSS Web Page:**

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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.**





# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

March 2018

Thursday, March 1, 2018 at 7:00pm

## Rooted in the Islands: Documenting changes in the perennial flora of the archipelago of Bahia de Los Angeles, Mexico

Presented by Sula Vanderplank

Sula Vanderplank is a field botanist who studies natural history, floristics, and conservation science, her research has focused on the botany and ecology of Baja California, Mexico. For the last thirteen years Sula has published broadly on the flora of this region including field guides, academic books chapters and more than 25 peer-reviewed papers. Sula also serves as an adjunct researcher at San Diego State University and the Center for Scientific Research and Higher Education of Ensenada

(CICESE). Sula is also a research associate at the San Diego Natural History Museum (The Nat) and science advisor at Terra Peninsular.

Want to know more about what is happening in Baja California? Plan to attend this program presentation and enjoy a wonderful night with Sula Vanderplank. Also, enjoy some great snacks, win some beautiful plants and pick up your free plant when you leave.



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

Thursday, April 5, 2018 at 7:00pm

Relocation of the Loran Whitlock Cycad Collection

Presented by Gary D. Roberson

Huntington Botanical Gardens, San Marino, California

## March 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

Thank you for renewing your membership in TCSS. To date almost 1,000 of you have renewed. We are the largest local cactus and succulent society in the world. That's amazing! But, its not about numbers, its really about the interest, concern, support and passion for plants from all of you. Thank you again.

Spring is almost here which means summer is just around the corner. We hardly have time to take off the frost cloth and uncover the plastic on the greenhouses, when we need to put on shade cloth and protect plants from what will be another hot summer. Can it be more fun than this?

I have put together a list (hopefully complete) of plant sales at many of the botanical gardens and non-profits. They include some great sales that you should attend both here and to the north. But, do save some time, space and especially money to shop our vendors at Sonoran XII. You have heard me say

this many times that support for our growers, nurseries and botanic gardens is the most important thing we can do for our hobby.

In the near future we will be adding a spring sale at Pima Prickly Park and a fall sale on the east side of Tucson to go along with our summer Blooming Barrel Sale. These will feature our rescue plants and a variety of many other plant and pottery vendors.

Come out to Pima Prickly Park and see what we have accomplished in coordination and cooperation with Pima County Natural Resources Parks and Recreation (NRPR). We need your feedback and ideas.

The most important function that is coming up is SONORAN XII. I really need your support for this conference and all its activities. This conference is for you and it is our way of thanking you for all you do.

Thank you for your support.

Dick Wiedhopf, President

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## Frost Hardiness of Sansevierias – My Experience in Tucson, Arizona

Alan Myklebust • myklebust@dakotacom.net

Sansevierias are considered to be exotic houseplants throughout most of North America and in many temperate areas of the world. In tropical areas of the planet, and of course, in natural habitats, sansevierias flourish under certain soil and climatic conditions, whether cultivated by humans or not. Plant horticultural manuals often recommend that sansevierias be grown at temperatures above 55 degrees Fahrenheit (12.7 degrees Celsius). Chahinian (2001) stated that sansevierias “will promptly die in a matter of hours if they are allowed to go below freezing temperatures. This is because they have no protective chemicals in their water storage cells. Other succulents have an antifreeze compound . . .”

As an enthusiast of over 40 years, I have long been curious about the temperature and climatic tolerances of cultivating sansevierias. Despite the advice from experts, I realized early on that certain sansevierias exhibited a greater tolerance for temperature extremes than others. Travels to a variety of botanical gardens outside of the tropics, such as the Desert Botanical Garden in Phoenix, the Huntington Botanical Garden, and the Exotic Garden of Monaco, demonstrated to me that growing some sansevierias in the landscape is certainly feasible in colder climates. In an early issue of this journal, Mike Phillips (2001) wrote of his experimentation with growing sansevierias in his garden soil in the United Kingdom. This article further piqued my curiosity, and as my collection of sansevierias had grown well beyond my limit to shelter them during the cold season, I expanded experimentation in earnest. After 25 years of collecting, I had accumulated sufficient plant material to take the risk with various species of sansevierias.

Tucson, Arizona, is in the heart of the Sonoran Desert of North America at a latitude of approximately 32 degrees north. Tucson is surrounded by mountains reaching an elevation of nearly 10,000 feet (3048 meters), and the valley itself is about 2,200 feet (714 meters) above sea level. The annual temperature range in this desert valley can be extreme, from a record high of 117

degrees Fahrenheit (47.2 degrees Celsius) in 1990 to a record low of 6 degrees Fahrenheit (-14.4 degrees Celsius) in 1913. However, on average, Tucson ranges between 100 degrees and 40 degrees Fahrenheit (47 – 5 degrees Celsius) and is placed in zone 9b on the USDA plant hardiness map. The average rainfall is just over 11 inches annually (27.9 centimeters) with about half in the winter and half in the summer. Obviously, these are not ideal growing conditions for many exotic plants! On the other hand, the climate is ideal for certain cacti and succulents, and the Sonoran Desert is home to many fantastic plants, including *Carnegiea gigantea*, the giant saguaro cactus.

I began growing sansevierias outdoors in the 1970s, and every winter I dutifully brought the plants inside the house for warmth and protection. After a number of seasons of this ritual, and as my plants multiplied, I constructed a small backyard greenhouse. Soon, this too, became insufficient to house my expanding collection during the cold months, so I began leaving certain species outside in pots and containers around the garden. On the occasional frosty nights, I would cover the plants with sheets or frost cloth for added protection. Some of the plants were placed under trees and bushes, simulating their growing conditions in type localities. As typically happens with sansevierias, many of my plants sent rhizomes out from the pots and into the native soil. My grand experiment took on a new dimension!

As my successes growing certain sansevierias out in the garden increased, I began to plant some species in raised beds and directly into the native soil. Along the way, I experienced some tremendous results, but also some dismal failures. The tolerances of sansevieria species to soil and climatic conditions varies greatly, and isn't always what seems logical. My first inclination was to look at the morphology of the species, and consider that as an indication of the plant's hardiness. In other

*Continued on page 2*

words, if the species appeared robust, with thick leaves, it must be able to tolerate cooler temperatures. A number of thick-leaved species disproved this hypothesis rather quickly, including *Sansevieria stuckyi*, *pinguicula*, cv 'Superclone,' *robusta*, *suffruticosa*, *bacularis*, *perrotii*, *powellii*, *elliptica* cv 'Horwood,' and *ehrenburghii*. However, some of the thicker species did grow well under the stress of cold, such as *Sansevieria hallii*, *pearsonii*, *dawei*, *erythraeae*, *patens*, cv 'Leopard Bat,' *fischeri*, and *cylindrica*.

Surprisingly, some of the flat-leaved species of *sansevieria* are also quite cold hardy according to my research and experimentation. Early on, I observed that the dark-leaved clone of *Sansevieria subspicata* was very tolerant of cold and wet conditions and survived in a variety of locations and microclimates in my garden. Further validation of this fact came when I visited an abandoned nursery in Tucson where I had purchased many plants over the years. Among the disheveled greenhouses and broken down benches, I found that several species of *sansevierias* had survived without human intervention for nearly five years! *Sansevieria subspicata*, *pearsonii*, *aethiopica*, *hyacinthoides*, and *kirkii* var. *puchra* were thriving under old benches in broken pots and in the native soil. These *sansevierias* had not succumbed to the lack of rain or killing frosts.

In February 2011, Tucson and much of the southwestern USA experienced a severe freeze when temperatures plummeted due to a 'polar vortex,' which resulted low, freezing temperatures for four consecutive nights. Sensitive plants throughout the region were decimated and collapsed into rotting mush as temperatures plunged to between 15 to 18 degrees Fahrenheit (-9.4 to -7.7 degrees Celsius). Most *sansevierias* that were not in heated structures were severely damaged, and as Chahinian stated, "promptly died in a matter of hours." Yet, surprisingly, some *sansevierias* survived with only a bit of winter scar and freeze damage, and some which initially appeared dead, subsequently recovered from underground rhizomes. These plants were somewhat protected, but lacked a heat source other than a ramada roof, the nearby house, green house, a garden wall, or a random light bulb placed here and there in a somewhat futile attempt to stave off the extreme cold. Plants such as *Sansevieria longiflora*, *fischeri*, *kirkii* var. *pulchra*, *metallica*, *masoniana*, cv 'Leopard Bat,' and *cylindrica* grew back from underground rhizomes, and now five years later, are just as magnificent, or even more so, than before the 'Great Freeze' of 2011. Other species, such as *Sansevieria subspicata*, *pearsonii*, *aethiopica*, *scabrifolia*, cv 'Alice Waidhoffer,' *macrophylla*, *hallii*, *erythraeae*, *grandis*, and the large, spoon-leaf *S. fasciata* (Figure 15) came through the extreme cold with minimal scarring.

Of course, microclimates are important for plant survival. In Tucson, nearly all *sansevierias* need protection from the scorching sun, except for the hardiest of species already mentioned. Protection provided by a wall, a tree, or a shrub, for even part of the day, can make the difference in surviving both heat and cold. Surrounding plants with rocks and stones holds in moisture and heat for roots and rhizomes. Trees and bushes and structures provide shade, protect plants from chilling frost and hold in ground warmth on chilly nights. In addition, I plant *sansevierias* out into the garden early in the growing season

after the danger of a late frost, so the plants will have sufficient time to become established.

Most of us know that most species of *Sansevieria*, similar to adeniums and plumerias, cannot survive cold and wet conditions. Conversely, when *sansevierias* remain dry during dormancy, they can tolerate colder temperatures. Tucson's relatively low winter rainfall supports this phenomenon, but to supplement dry conditions, placing certain *sansevierias* under overhangs, ramadas and porches increases their ability to withstand chilling frost.

In recent years, I have planted *sansevieria* hybrids in various outdoor garden locations with considerable success. Certain hybrids, such as the USDA 'Fla. H-13' and "Fla. H54-3,' appear to have increased tolerance for low temperatures. Likewise, cv 'Leopard Bat,' cv 'Balthasar,' and other unnamed *Sansevieria hyacinthoides*, *thyrsoiflora*, and *aethiopica* crosses seem able to better withstand colder weather than the true species. Conversely, all variegated *sansevierias* appear to have decreased tolerance to lower temperatures, as do cultivars of *Sansevieria trifasciata* var. *hahnii*.

Outdoor plantings of *sansevierias* have become more common in Tucson, and in Phoenix, Arizona, 125 miles to the north. *Sansevieria cylindrica* grows along a walkway at the Desert Botanical Garden in Phoenix, and also in the open courtyard of the University of Arizona Poetry Center in Tucson. The University also selected *Sansevieria suffruticosa* for plantings at the Environment and Natural Resources 2 building (ENR2). (Figure 16) The State of Arizona office building in Tucson has had *Sansevieria masoniana*, *kirkii* and *cylindrica*, growing in an open-air courtyard for many years. (Figures 17-18)

Other growers of *sansevierias* in Tucson have also reported hardiness for their plants. Mark Dimmitt, Director of Natural History for the Arizona Sonora Desert Museum in Tucson, has been growing *Sansevieria stuckyi*, cv 'Superclone,' *suffruticosa*, and *sinus-simiorum* in unprotected locations for a number of years. The plants do exhibit some occasional winter scarring, but thrive nonetheless. Robert Webb, co-editor of this journal and the owner of Arid Lands Greenhouses in Tucson, has grown *Sansevieria fischeri* in the ground at his home for years, and *masoniana*, as well. He dug up the *fischeri* and it became the stock plant for the nursery, and the *masoniana* has frozen to the ground and then come up the following year from its massive rootstock.

My passion for acclimating *sansevierias* to the conditions found in the Sonoran Desert of North America continues to expand despite the challenges. In the coming seasons I will experiment with even more species and cultivars, including *Sansevieria liberica*, *elliptica*, *forskaoliana*, *frequens*, *sinus-simiorum*, and *volkensii*. I am sure there will continue to be successes and failures. If you have experiences growing *sansevierias* in your garden and local climate, please consider sharing them in future issues of this journal.

Quite hardy *sansevierias* (to approximately 25 degrees Fahrenheit, or perhaps even lower):

*Sansevieria aethiopica* (all clones including 'Alice Waidhoffer')

Continued from page 2

and *S. scabrifolia* (Figs. 1-3).

*Sansevieria hallii* ('baseball bat') (Fig. 4).

*Sansevieria macrophylla* (hyacinthoides clones) (Fig. 5).

*Sansevieria metallica*.

*Sansevieria subspicata* (Fig. 6).

*Sansevieria pearsonii* (all clones – green, blue, Transvaal, *Sansevieria rhodesiana*, etc.) (Figs. 7, 8) USDA hybrids ('Fla. H-13' and 'Fla.-H54-3') (Fig. 9-11).

Somewhat hardy sansevierias (to approximately 30 degrees Fahrenheit, or perhaps, even lower):

*Sansevieria cv 'Balthasar.'*

*Sansevieria cv 'Leopard Bat.'*

*Sansevieria cylindrica* (all clones). *Sansevieria dawei*.

*Sansevieria erythraeae* (Fig. 12).

*Sansevieria fischeri* (Fig. 13).

*Sansevieria grandis*.

*Sansevieria kirkii* (all clones including *Sansevieria kirkii* var. *pulchra*) (Fig. 14). *Sansevieria masoniana*.

*Sansevieria patens* and *Sansevieria cv 'Ed Eby.'*

Not hardy sansevierias (cannot withstand frost or cold wet conditions):

*Sansevieria bacularis*.

*Sansevieria ehrenbergii*.

*Sansevieria perrotii*.

*Sansevieria pinguicula*.

*Sansevieria powellii*.

*Sansevieria robusta*.

### References

Chahinian, B.J. (2001). In praise of *Sansevieria*. *Sansevieria* 1: 14-15.

Phillips, M. (2001). Garden with sansevierias. *Sansevieria* 2: 4.



Fig. 1. *Sansevieria aethiopica* under a shrub in the garden.



Fig. 2. *Sansevieria aethiopica* cv 'Alice Waidhofer' in a garden ground bed.



Fig. 3. *Sansevieria aethiopica* (*scabrifolia*) in a large garden pot.



Fig. 4. *Sansevieria hallii* growing in a large concrete trough.



Fig. 5. *Sansevieria macrophylla* (*hyacinthoides*) in a large garden pot.



Fig. 6. *Sansevieria subspicata* blooming among agave, aloe, and cacti



Fig. 7. *Sansevieria pearsonii* ('green') in a large garden pot.



Fig. 8. *Sansevieria pearsonii* growing among cacti and agave.



Fig. 9. *Sansevieria aethiopica* and a USDA hybrid under shrubs in the front garden.



Fig. 11. USDA hybrids and *Sansevieria hyacinthoides*.



Fig. 10. A USDA hybrid planted out in the front garden under a shrub



Fig. 12. USDA hybrids in a garden ground bed.



Fig. 13. *Sansevieria erythaeae* in a large porch pot.



Fig. 14. *Sansevieria fischeri* still alive after 20+ years growing outside in Tucson.



Fig. 15. *Sansevieria kirkii* growing in a raised bed.

## FROM THE FLORILEGIUM

When you first see Margaret Pope's illustration of *Calliandra eriophylla*, you'll likely be drawn to the fairy duster's flashy pink flowers, and you might not notice the small vine climbing and twisting itself around the shrub's branches. This tough little plant is slender janusia (*Cottisia gracilis*, previously *Janusia gracilis*), one of only three species in the genus *Cottisia*, all of which can be found in the Sonoran Desert.

From April to October, the vine's bright yellow flowers attract oil-collecting bees that use their hind legs to scrape oil from the glands on the undersides of the sepals, pollinating the flower in the process. This method of attracting pollinators is common among the New World species of Malpighiaceae, the Barbados cherry family, of which the genus *Cottisia* is a member.

Slender janusia's fruit is a samara, a winged seed pod somewhat similar to a maple seed. In this case, it is a three-winged fruit that turns a reddish-bronze color when mature (see the lower left of Margaret's illustration).

The second illustration shown here is an enlargement of slender janusia's flower. The five spoon-shaped petals are bright yellow and slightly wrinkled with uneven edges, each roughly 1/4" long. As the petals age, they turn reddish-orange. Between each petal, you can see the sepals below, each with a pair of tiny oil glands.

This illustration of the janusia flower was painted by Philip Jenkins, the former curatorial specialist at the University

of Arizona Herbarium who passed away in February of last year. His illustration was incorporated into the new logo for the Herbarium that was designed by Shelley McMahon, the Herbarium's Director.

Phil spent many years working for the Forest Service, first in Washington and eventually in Arizona. He received bachelor's and master's degrees in biology from the University of Arizona and worked for the Herbarium from 1992 to 2011. Phil was a skilled botanical illustrator, and after his retirement from the Herbarium, he graciously agreed to make occasional visits to Margaret Pope's 'Drawing Plants for a Florilegium' class at the Desert Museum. We all benefitted from his vast knowledge and his patient explanation of the various structures of whatever plants we were drawing.

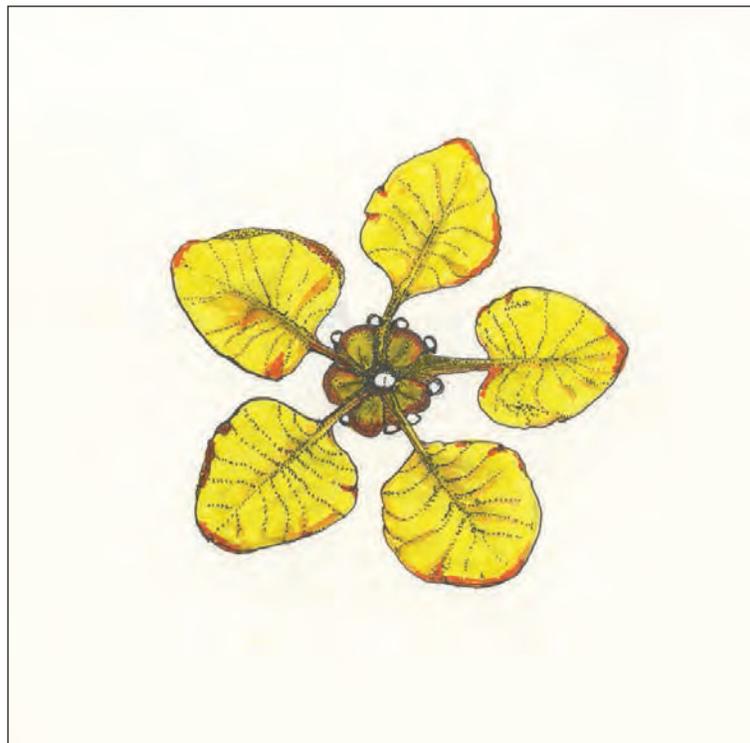
The Herbarium's website has an excellent page dedicated to the development and significance of their logo, including a description of *Cottisia gracilis* and an explanation of the origin of the name 'Janusia' (<https://cals.arizona.edu/herbarium/content/about-our-logo>). It's gratifying to see a highly detailed and accurate botanical illustration used to such wonderful effect in a logo.

You can view these two illustrations in greater detail on the Florilegium Program's website along with the first botanical illustration of *Cottisia gracilis* prepared for the Pacific Railroad Survey Report for the southern California route (1857). We have also provided an interesting account of the tangled history of the names

*Cottisia* and *Janusia*. A link is provided on our home page ([www.art-botanical.org](http://www.art-botanical.org)).



*Calliandra eriophylla* with *Cottisia gracilis*, © 1998 Margaret Pope Colored Pencil, From Sonora Desert Wildflowers poster



*Cottisia gracilis*, © Philip Jenkins Pen and Ink with Watercolor, Image Courtesy of the University of Arizona Herbarium

# Spring Sale Information

## Desert Survivors

Spring Plant Sale:

March 3th (Saturday) - Members Sale

March 6th (Tuesday) thru March 10th (Saturday) -  
Public&Members

## Monsoon Plant Sale:

July 21st (Saturday) - Public & Members

## Fall Plant Sale:

September 22nd (Saturday) - Members Sale

September 25th (Tuesday) thru September 29th (Saturday) -  
Public&Members

## Boyce Thompson Arboretum

### Spring Plant Sale Daily March 9 - 25, 2018

Our Spring Plant Sale opens Friday March 9 with our special Members-Only preview day of shopping, and then continues daily through March 10 - 25. Wondering if we have specific plants in stock? Call our staff during daily business hours at 520 - 689 - 2723

## Desert Botanical Garden

### Spring Plant Sale

March 16, 2018 - March 18, 2018

Members Preview: Friday, March 16 | 7 a.m. - 5 p.m.

Open to General Public:

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

Sunday, March 18 | 7 a.m. - 3 p.m.

## Tohono Chul

### Spring Plant Sale

#### Members' Preview:

Wednesday | March 14 | 12 - 6 p.m. | Propagation Area

#### General Public:

Saturday | March 17 | 9 a.m. - 5 p.m. | Propagation Area

Sunday | March 18 | 10 a.m. - 4 p.m. | Propagation Area

## Pima Master Gardeners | 4210 N Campbell Ave

Spring Plant Sale April 7, 2018 - 8 am - 11 am

19th Annual Master Gardener Home Tour

April 14th, 2018 - 9 am - 3 pm

Tickets will go on sale March 2, 2018,

at local nurseries and on line.

## Sonoran XII Hotel Tucson City Center

475 N. Granada Avenue • Tucson, Arizona 85701

Member and Registrant's Sale

April 27 6:00pm to 7:15pm

Public Sale

April 28 8:00am to 5:00am

April 29 8:00am to 1:30pm

TBG No Weird Plant Sale

ASDM Fall sale only

## Central Arizona Cactus and Succulent Society

Our 2018 Annual Show and Sale  
will be open to the public  
Friday and Saturday, April 6 & 7, 9:00 AM - 5:00 PM,  
and Sunday, April 8, 9:00 AM - 4 PM.

The Show and Sale is in Dorrance Hall  
and the patio area outside of the hall at  
the Desert Botanical Garden

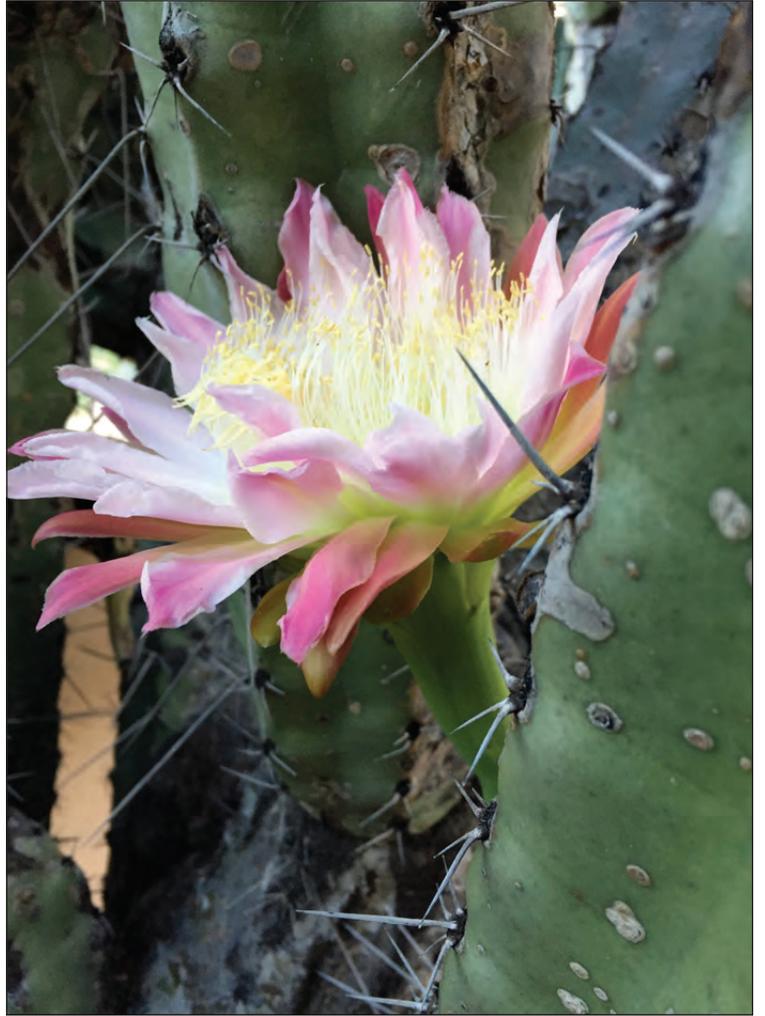
**SAVE THE DATE:  
Saturday, Oct. 20, 2018,  
9:00 - 3:00.**

## TCSS Desert Garden Tour.

There will be 5 gardens to visit on the  
near Northeast side of Tucson.

Volunteers will be needed and will be solicited  
at the September and October general meetings

# Cacti and Succulents in Bloom





## **Tucson Cactus and Succulent Conference**

**Friday, April 27 (setup & Member Plant Sale)**

**Saturday, April 28 & Sunday, April 29**

Featuring

# **Program Presentations, Workshops Cactus and Succulent Plants, Pottery, Books & Art Sales**

**Special Guest Speaker Program Presentations by**

**Michelle Cloud-Hughes • Kevin Hultine • Bill Peachey • Andrea Ramon • Dr. Rob Wallace**

**Special Guest Workshop Programs by**

**Keith Burkhard • Scott Calhoun • Tom Gatz • Jim Hastings**

**Bill Peachey • Ernesto Sandoval • Starr Urbatsch**

## **Hotel Tucson City Center**

**475 N. Granada Avenue • Tucson, Arizona 85701**

**<http://hoteltucsoncitycenter.com>**

**Presented by the Tucson Cactus and Succulent Society**

**Visit us on the web for more information:**

**[www.tucsoncactus.org](http://www.tucsoncactus.org)**





**Cacti Rescued - Since 1999**  
**392 Rescues - 30,446 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## March 2018

**Thursday, March 1, 2018 at 7:00pm**

"Rooted in the Islands: Documenting changes in the perennial flora of the archipelago of Bahia de Los Angeles, Mexico"  
Presented by Sula Vanderplank

**Tuesday March 13, 2018 at 7:00 pm**

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

## Acknowledgement of Contributions

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

### General Fund

Bobbi & Michael Nichols  
Edgar Rawl  
Brad & Doris Woltman  
Henry & Janet Garica  
Mike & Bridget Gagnon  
Vickie Veen

### Pima Prickly Park

Roger Salzgeber

### Research

Patricia King

### Publications

Teresa Hazen & Patrick Howard

### TCSS BOARD

#### Officers

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

**Secretary:** Susan Durham  
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#### Board of Directors:

[board@Tucsoncactus.org](mailto:board@Tucsoncactus.org)

(terms expire December 31 of year indicated)

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Donna Ellis (2020)  
Bill Salisbury (2020)  
Kris Thompson (2020)  
Teresa Curtis (2019)  
Peter Ertman (2019)  
Don Morehart (2019)  
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Bill Holcombe (2019)

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**Garden Tours:** Bill Salisbury • [tours@Tucsoncactus.org](mailto:tours@Tucsoncactus.org)

**Field Trips/tours:** Rob Romero/Joie Guinta  
[trips@Tucsoncactus.org](mailto:trips@Tucsoncactus.org)

**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Thursday, April 19, 2018**

#### TCSS Web Page:

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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.





# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

April 2018

Thursday, April 5, 2018 at 7:00pm

## Relocation of the Loran Whitelock Cycad Collection

Presented by Gary D. Roberson



In the spring of 2015, The Huntington Library and Botanical Gardens more than tripled their existing collection of cycads with a donation from the estate of a Loran Whitelock of Eagle Rock, California. Loran was a locally famous passionate plantsman whose collection included many unusual and rare plants, with an emphasis on cycads. Within a three month window, we transplanted 620 cycads from his private garden into a new planting at the Huntington. Each of those

specimens had to be identified, labeled and recorded before this herculean move could even start.

Jim Folsom, our Director of the Botanical Gardens, worked with Loran to design a "ribbon" of cycads that cuts through from the easternmost Desert Garden to the westernmost Japanese garden. This allowed us to keep the cycads in botanical families and closely match the climates of their homelands. The plants have responded amazingly well to the transplant, especially remarkable when you realize we dug them out of the ground bareroot, trucked them down York Boulevard and plopped them into their new home in San Marino.

Loran's estate has also generously endowed a permanent position on the Huntington Botanical staff for cycad research. We are already collecting and freezing pollen to attempt hand pollinations of these rare prehistoric species. Now that the plants are settling in, putting out lush new fronds and spectacular flowering cones, you'll be able to walk the ribbon and sense the beauty that captured Mr. Whitelock's heart.

Gary Roberson has enjoyed plants for most of his life, starting with his own garden at the age of 6, and was inspired to pursue horticulture as a career by his Grandfather. His involvement with Future Farmer's of America took him to Germany and Australia as an horticultural intern. He has worked in the nursery industry, both retail and wholesale.

When an opportunity arose to work at the Huntington Library and Botanical Garden, he moved from Washington state to Southern California. Gary has worked in several gardens, including the Desert Garden, at the Huntington for over 15 years. He now serves as the Lead Project Gardener for the Cycad and Palm Collection.

When a large donation of cycads was willed to the Huntington from the estate of Loran Whitelock, Gary was instrumental in coordinating the move of over 640 cycad specimens from Eagle Rock to the Huntington grounds. All in all, over 2800 plants (clivias, staghorn ferns, orchids, aloes, agaves, palms, etc.) were collected from Loran's extensive garden.



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

## April Meeting Refreshments

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



## President's Message

Since 1996, TCSS has held the Sonoran Conference every even numbered year. This will be the twelfth. We have a great leadership team that puts this together for your benefit every two years. This is our way of saying "Thank You" for all the things you do to make this society great. You participate in our nationally known cactus rescue program. You are involved in our

k-12 educational programs. You supported the publication of our "Field Guide" and "Cookbook". You attend our meetings, "Good Time Silent Auction", and our rescue plant sales. You volunteer at Pima Prickly Park and donate plants. You donate money to support our activities and a lot more. That's why we put together this Sonoran XII conference at a minimum cost to you.

We hope you will attend some or all of the events. There are excellent speakers and topics this year and a focus on the Saguaros. Great workshops that will give you new insights. The

sale brings together 25 great vendors that need your support. There will be hundreds of rescued plants including over 100 saguaros. Please at least attend the plant sales. Our vendors are the heart of the cactus and succulent hobby and are extremely important to us. We have a special sale for TCSS members and registrants at the conference on Friday night. Please attend. Encourage your friends and neighbors to attend on Saturday or Sunday.

Additionally, we need your support for the show and silent auction. There are over 1,100 members who could bring at least one plant for the show and perhaps donate a special plant for the auction. This is really important and will make a lasting educational impression on the members and public who attend. Please participate.

There is more information in this newsletter, on our website or coming to your mailbox.

Thank you for your support.

Dick Wiedhopf, President

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## Sonoran XII Conference 2018 Plant Show & Silent Auction

### Plant Show Information:

The Plant Show Committee will be accepting plants Friday, April 27 from 8:00 am – 6:00 pm

### Show Rules:

1. You must own the plant for at least six months before the show date.
2. Plants legally collected in the wild may be entered.
3. Basically, the entry should look attractive.
4. There is no limit as to the size of the plant.
5. You may bring as many plants as you wish.
6. It would be helpful if you would email or send your proposed list of show plants April 23 to:  
TCSS Sonoran XII Show  
PO Box 64759  
Tucson, AZ 85728-4759  
Email: [info@tucsoncactus.org](mailto:info@tucsoncactus.org)

The Show Committee will determine if a plant is allowed as an entry according to the criteria listed. The decision of the Show Committee is final.

### General Guidelines:

1. If possible, avoid watering your entries for at least two days before the entry date to prevent dampness on tables.
2. Containers should be clean and unbroken, and free from salt accumulation and stains. A top dressing is recommended but not required.
3. To facilitate setup, please get your plants to the show as early in the day as possible on Friday, April 27th.
4. Only Cacti and Succulents will be accepted for entry in the show. There are no specified plant categories.
5. All entries will be voted on by TCSS members and the public.
6. You do not have to be registered for Sonoran XII to enter your plants. Ideally each TCSS member should enter at least one or more plants to the show.

7. Any well-grown plant that is special to you is a candidate for the show. The plant does not have to be rare or unusual.
8. This is not a judged show and winners are chosen by the public who vote by placing beans in a box by each plant.

**NOTE:** If you need help transporting your plant show entries or if you have any questions, need additional information or would like to volunteer to help at the show please contact TCSS by April 23rd at 520-256-2447 or email to: [info@tucsoncactus.org](mailto:info@tucsoncactus.org)

### Silent Auction Ends Saturday April 28, 2018 at 5:00pm

Donations of interesting plants, pots, art and related materials are encouraged and welcomed. Please bring your donations on Friday April 27 or before Noon on Saturday, April 28. See the note below for consigned donations.

Bring your donation to the Front Lobby of the Hotel where volunteers and tables will be set-up. For more information contact us at the above address, phone or email.

Thank you.

Note: Some items are consigned to the auction in which case the consignee receives the minimum bid and TCSS receives the amount above the minimum. These items will have a starting bid of at least \$20.00.



## Tucson Cactus and Succulent Conference

Saturday, April 28 • 8am-5pm & Sunday, April 29 • 8am-1:30pm  
(Sales on Sunday ends at 1:30pm)

# Cactus and Succulent Plants, Pottery, Books & Art Sales

**ALL SALES ARE OPEN TO THE PUBLIC • Featuring**

- Arid Adaptations
- Arid Lands Greenhouses
- Arid Oasis
- Blue Sky Plants
- Botanicals in Clay
- Carol Mullen Pottery
- Catrina Briscoe Desert Arts
- Dan's Desert Plants
- Destination Forever Ranch
- Dryland Plants
- Ecogro
- Home Tools
- Jan Bell Pottery
- Jen's Hypertufa Pots
- Julie Szerina Stein
- Kelly's Greens
- Nighthawk Natives
- Planta Del Sol
- Plants for the Southwest & Living Stones Nursery
- Spadefoot Nursery
- Starr Nursery
- Sticky Situation
- Succulentia
- TANK'S Green Stuff
- the CAM Plant
- TCSS Books & More
- TCSS Rescued Cacti

## Hotel Tucson City Center

475 N. Granada Avenue • Tucson, Arizona 85701

Presented by the Tucson Cactus and Succulent Society

Visit us on the web for more information:

[www.tucsoncactus.org](http://www.tucsoncactus.org)





## **Tucson Cactus and Succulent Conference**

**Friday, April 27 (Setup, Member & Registrant Plant Sale Only)**

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## FROM THE FLORILEGIUM

With the upcoming publication of “Legumes of Arizona: An Illustrated Flora and Reference”, we plan to take a closer look this year at several of the illustrations prepared for the book and explore some of the characteristics of plants in the legume family.

Shown here is a drawing of *Parkinsonia aculeata*, the Mexican palo verde, by Phoenix artist Susan Ashton. Sometimes called the Jerusalem thorn, the tree bears some very nasty thorns, as noted in its specific epithet, “aculeata”, or prickly. It is often called, affectionately or not, a self-mulching tree because of its prodigious leaf litter, which is actually an accumulation of the dried rachillas, or midribs, of the leaves. A tough and determined tree, Mexican palo verde is now distributed widely throughout the world in tropical, sub-tropical, and Mediterranean climates and is considered generally as an invasive nuisance.

And yet it is a beautiful tree, with its long, drooping, graceful leaves and bright yellow orange-spotted flowers (a favorite of orioles). Note in the enlargement of Susan’s illustration of the palo verde flower that only the topmost petal is spotted. Once pollinated, that spotted petal, or banner, turns a reddish orange and folds forward. This movement can be seen in the side view of the flowers in the drawing where all the petals have been removed except for the banner.

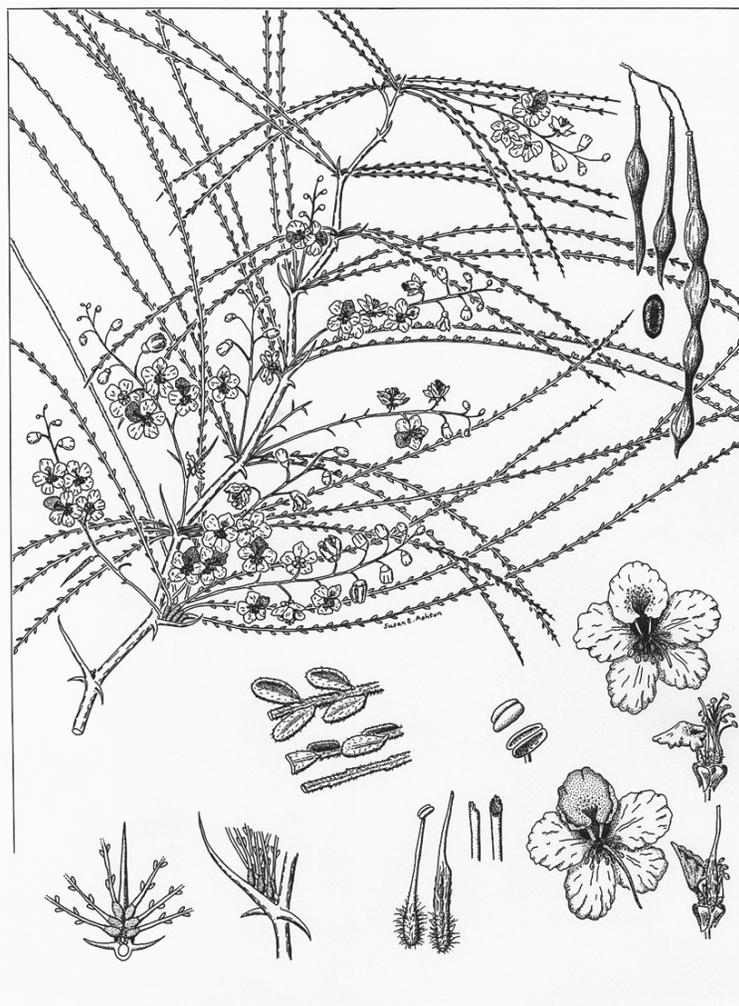
*Parkinsonia aculeata* was first described by a Minim friar, Charles Plumier (1646–1704). Plumier, a botanist, skilled draftsman and painter, made three journeys to the French Antilles, beginning in 1689. His first collecting expedition was so successful that he was appointed royal botanist to Louis XIV, who supported Plumier’s next two expeditions in 1693 and 1695. On his third voyage he visited Guadeloupe, Santo Domingo, and Martinique where he encountered *Parkinsonia aculeata*. In 1703, he published “Nova plantarum americanarum genera”, with his description and drawing of *Parkinsonia aculeata*. Plumier died the following year of pleurisy, leaving an enormous body of work unpublished, including some 6,000 drawings.

Cactus lovers might be interested in the fact that Plumier, during his first journey to Martinique, determined that cochineal, the *Opuntia* parasite so valuable as a source of red dye for the European textile trade, is an insect. While it’s hard to believe that this was even a question, at that time no one was quite sure what the substance of cochineal was, and it was generally considered to be a product of the cactus from which it was harvested—perhaps a seed. Plumier was widely derided for declaring cochineal an insect, but 13 years after his death, Claude-Joseph Geoffroy (1685–1752), a French chemist and apothecary, with the assistance of rehydration and a microscope, proved Plumier to be correct.

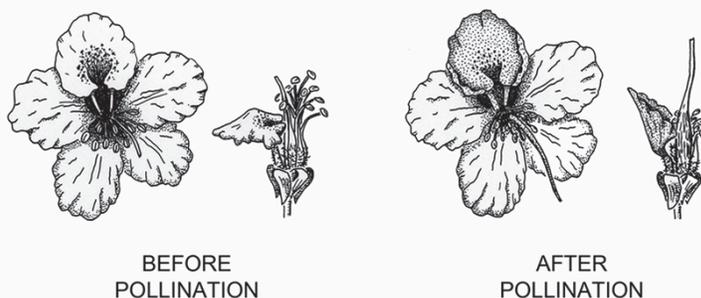
Plumier named the genus *Parkinsonia* to honor John Parkinson (1567-1650), an apothecary and one of Britain’s first botanists. Parkinson served as official apothecary to King James I and was later named royal botanist by King Charles I. He was also an ardent gardener, and his book, “Paradisi in Sole Paradisus Terrestris” (1629), is considered to be the first book on gardening to be published in England. It contained descriptions of some 1,000 plants with 800 illustrations, divided into three parts: the flower garden, the kitchen garden, and the orchard garden.

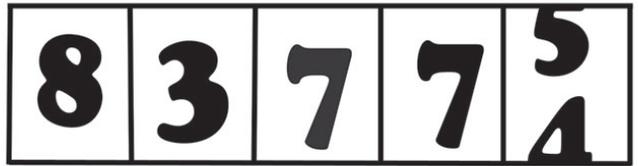
You can view Susan’s drawing in greater detail on the Florilegium Program’s website, along with illustrations by Plumier and some of the woodcuts from Parkinson’s works. We’ve also provided a more detailed account of the cochineal controversy along with an illustration of the insect from Curtis’s *Botanical Magazine*. A link is provided on our home page ([www.art-botanical.org](http://www.art-botanical.org)).

More of Susan’s work can be seen in past issues of “The Desert Breeze”. *Marina parryi* (Parry’s false prairie-clover), another drawing prepared for the legume publication, and *Fouquieria columnaris* (boojum) are in the December 2013 issue along with a brief biography of the artist. Her drawing of *Parkinsonia microphylla* (foothill palo verde) can be seen in the January 2017 issue. More of her work, including her drawings for the legumes project, is on her website ([www.sashtonart.com](http://www.sashtonart.com))



*Parkinsonia aculeata*, Mexican palo verde, © 2015 Susan Ashton, Pen and ink





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**April 2018**

**Thursday, April 5, 2018 at 7:00pm**

"Relocation of the Loran Whitelock Cycad Collection"  
Presented by Gary D. Roberson

**Tuesday April 10, 2018 at 7:00 pm**

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

**Friday - Sunday April 27, 28, 29, 2018**

Sonoran XII Conference  
Hotel Tucson City Center Inn Suites,  
475 N. Granada Ave. Tucson AZ 85701.

## 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.

### Educational Outreach

Christine Flanagan  
Allan Morgan  
David Bishop  
Charla Dain

### General Fund

Diana Freshwater & Family  
Elizabeth & Nancy Vlassis

### TCSS BOARD

#### Officers

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

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#### Board of Directors:

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(terms expire December 31 of year indicated)

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Donna Ellis (2020)

Bill Salisbury (2020)

Kris Thompson (2020)

Teresa Curtis (2019)

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Bill Holcombe (2019)

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**Floilegium:** Margaret Pope • [art@Tucsoncactus.org](mailto:art@Tucsoncactus.org)

**Librarian:** Joie Giunta • [librarian@Tucsoncactus.org](mailto:librarian@Tucsoncactus.org)

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**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Thursday, April 19, 2018**

**TCSS Web Page:**

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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.**

**Thursday, May 3, 2018 at 7:00pm**

**Endangered Plants**

Presented by Bill Thornton



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

May 2018

Thursday, May 3, 2018 at 7:00pm

## Our Vanishing Cacti

Presented by Bill Thornton



Nearly 500 species of our favorite plants are threatened with extinction. Twenty seven species are listed as “critically endangered”.

In this program Bill Thornton looks at some of the leading threats to all cacti, with special attention to three endangered Arizona species, what has been and is being done, and with examples from some of the world’s most endangered plants and what needs to be done to save them. Are we up to the task?

Bill is a second generation native Arizonan, lifelong desert plant lover, long time TCSS member and frequent cactus rescuer. He also serves on the boards of the Arizona Heritage Alliance and Friends of Ironwood Forest.

Please come and enjoy an evening with Bill. Have some excellent refreshments, win some wonderful plants and take home a free plant provided by TCSS. It is an opportunity to learn a few things, gather some plants and enjoy a great program.

Thursday, June 7, 2018 at 7:00pm  
Sowing Cacti: where Art and Science meet  
Presented by Michiel Pillet

## 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

### Unrestricted

William Peachy  
Frank Sagona & Family



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

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

## May Meeting Refreshments

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



## President's Message

An amazing event happened last weekend, over 200 cactus and succulent enthusiasts gathered to celebrate our hobby and the spectacular Sonoran Desert we cherish.

This was a big event that included the conference portion (speakers, workshops and meals) and a public event which included plant, pottery, art and book sales plus a show and silent auction. More than 30 vendors participated.

This is no small task and was only possible because of great volunteers. I especially want to thank Doug Rowsell, our

operation manager, for all the logistics involved in the set-up of all the facilities used. Vonn Watkins, vice-president who put together an incredible group of speakers and workshop presenters. Dale Johnson coordinated all the vendors for plant, pottery and art sales. Donna and Robert Ellis handled the rescue plant sales and coordinator great volunteers to support all the activities involved. Kris Thompson arranged all the radio, newspaper and other publicity which made this a huge success.

There are so many other that gave huge amount of time and energy to make this a success. They are so important to this society and I say to them, THANK YOU, THANK YOU, THANK YOU ALL!

Thank you for your support.

Dick Wiedhopf, President



## DID YOU KNOW?

There are many tantalizing mysteries in the park: What critter dug the curious hole in the dirt mound?... How can the javelinas be prevented from munching on the plants?.... Who pots the hundreds of rescue plants at the Pima County Nursery? Well, I was able to solve the

last mystery: Andrew Hatch !



Eight months ago Andrew became the propagator at the Pima County Native Plant Nursery. He is using his degree from the University of Arizona's College of Agriculture in sustainable plant systems. A Tucson native, he became a "plant person" while in college. He took a horticulture class and worked under Dr. Tanya Quist at the University of Arizona Arboretum. At the nursery he investigates different methods of seed treatments such as soaking, chipping and stratifying to determine how they grow.

Andrew is responsible for putting the rescue plants in pots and he had 900 creosotes salvaged at the time of this interview! Andrew shared that the biggest challenge at the nursery is "not enough hours in the day."

In addition to being the Volunteer Coordinator for the Pima County Native Plant Nursery, Andrew is also a comedian, actor, and musician. While he was in college, he saw improvisational theater and for the last ten years has taught "improv" classes and coached teams. He is the "lead detective" for Tucson's branch of The Dinner Detective... the largest interactive mystery dinner theater organization in the United States. ([www.thedinnerdetective.com](http://www.thedinnerdetective.com))

Andrew is also no stranger to TCSS. His mother belonged and he would attend events with his family. He shared that he loved the science presentations as well as the flower ones." It was a pleasure to "investigate" Andrew and his connection to the

Native Plant Nursery. He is indeed a gifted young man and a valuable asset for plant preservation! ----Cari Wright

## FROM THE PARK: WHAT'S NEW

As is often said "A picture is worth a thousand words." The following pictures show the outstanding progress in the park ! A heartfelt THANK YOU to each of you volunteers who make this possible!



## FROM THE FLORILEGIUM

As noted in last month's "Desert Breeze", over the next several months we'll be looking at some of the botanical illustrations prepared for the upcoming book, "Legumes of Arizona: An Illustrated Flora and Reference". This month's illustration is *Clitoria mariana*, the butterfly pea, by John Gerdes.

There are some 60 species in the genus *Clitoria* occurring in temperate and tropical regions throughout the world. Habits range from trees and shrubs to low twining vines, such as *Clitoria mariana*, which occurs in much of the United States, including southern Arizona.

The most striking feature of *Clitoria mariana* is its large two-inch papilionaceous (butterfly-like) flowers. John's pen and ink drawing clearly presents the large butterfly-shaped petal, or banner. Shown alongside John's drawing is a watercolor by Mary Vaux Walcott, painted in 1934, which shows the lavender and violet corolla and the reddish markings on the banner.

So, about the origin of the plant's name—yes, it's what you might imagine when looking at the flowers. The name likely was a result of the doctrine of signatures, an centuries-old practice among herbalists and apothecaries of using plants that resembled human body parts to treat ailments afflicting that part of the body. Thus, plants in the genus *Clitoria* (from the Greek "kleitoris") were used as an aphrodisiac and to treat infertility and venereal disease. Naming a plant after a resemblance to female anatomy hasn't been without controversy. Years after Linnaeus named four species of *Clitoria*, in 1753, several nineteenth-century botanists criticized the comparison of a flower's appearance to human genitalia, and all proposed alternative names. Nonetheless, the genus has remained *Clitoria*.

John Gerdes contributed several botanical illustrations for the Legumes of Arizona project. John, who passed away in 2014, was a self-taught artist whose subjects consist primarily of Arizona plants, animals, and landscapes. One of his paintings was accepted into the Top 200 of the Arts for the Parks Competition displayed in Jackson, Wyoming. Among other awards, he twice won first place in the North American Butterfly Association art competition. John was a member of the Southern Arizona Arts Guild and the Arizona Native Plant Society.

John's drawing of *Clitoria mariana*, along with Walcott's watercolor, can be viewed in greater detail on the Florilegium Program's website. A selection of his other drawings for "Legumes of Arizona" can be seen in the Sonoran Desert Florilegium section of our website, and biographical information about Mary Vaux Walcott and a gallery of her paintings are also on the site. Links can be found on our home page ([www.art-botanical.org](http://www.art-botanical.org)).



Butterfly Pea, *Clitoria mariana*, Mary Vaux Walcott, 1934  
From the collection of the Smithsonian American Art Museum



*Clitoria mariana*, Butterfly pea, © John Gerdes

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4

**Cacti Rescued - Since 1999**  
**392 Rescues - 30,446 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

**May 2018**

**Thursday, May 3, 2018 at 7:00pm**

"Our Vanishing Cacti"

Presented by Bill Thornton

**Tuesday May 8, 2018 at 7:00 pm**

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

**Trichocereus flower beginning to bloomopen**

Photo by Karen Keller



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**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**

**Thursday, May 24, 2018**

**TCSS Web Page:**

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto:webmaster@Tucsoncactus.org)

**For additional information call: (520) 256-2447**

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# DESERT BREEZE

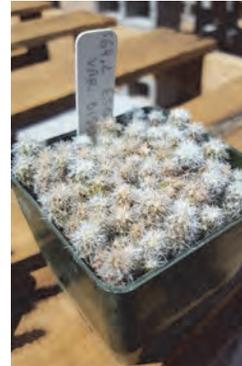
Newsletter of the Tucson Cactus and Succulent Society

June 2018

Thursday, June 7, 2018 at 7:00pm

## Sowing Cacti: where Art and Science meet

Presented by Michiel Pillet



Cacti are everywhere here in Tucson. Simply looking at our prickly landscape, it is easy to forget that if you go back far enough in time, every single cactus you see was once a tiny seed. Growing cacti from seed is one of the most rewarding and educational activities a cactophile can engage in. It allows commercial growers to offer the plants we love. It also permits conservationists to propagate plants for reintroduction into the wild. Unfortunately, very few enthusiasts end up giving sowing a shot. As we will see, it really is not all that difficult. However, seedlings need vastly different conditions than their adult counterparts, and there is lots of conflicting information out there. Together, we'll attempt to make sense of it all, and hopefully some of you will go home having caught the seed-growing bug. Make sure to bring your glasses so you can enjoy the intricate diversity seedlings have to offer!

Growing up in Belgium, home of the biggest cactus and succulent conference in the world, I moved to Montana in 2008 for college. In 2016, I started my doctoral studies at the University of Arizona, working on the impact of climate change on plants, including cacti. Early this year, my wife and I acquired property here in Tucson to start a succulent conservation nursery. I currently grow the majority of critically endangered and endangered cacti, most from seed. My goal is to propagate every single species of cactus to protect against extinction and to make rarely grown taxa more widely available. Tucson is without a doubt one of the world's centers of cactus mania, much of it revolving around the many beautiful nurseries here as well as the activities of TCSS.

Please join us for an excellent presentation by Michiel. Enjoy some great refreshments (please bring food and snacks if your last name initials are requested). Also, win a plant and get a free plant (provided by TCSS) when you retire for the evening.

## June Meeting Refreshments

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

Thursday, July 5, 2018 at 7:00pm  
Using DNA to help sort out Adenium species  
Presented by Mark Dimmitt



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

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



## President's Message

I have been a member of the Tucson Cactus and Succulent Society for almost 50 years. I have watched the membership ebb and flow but never believed that we would reach 1,200 members. For sure, we are the largest local cactus and succulent society in the world. We must be doing something right. Our society is based on our passion for these plants,

concerns about the environment and our belief in educating everyone about cacti, succulents and the Sonoran Desert.

Several months ago, I was interviewed by Time for Kids, a weekly publication subscribed to by teachers for their classrooms. The article is about our rescue program. I supplied information and John Durham supplied photos of this activity. Great! That's not the end of the story. We got an email from a mother of an 8 year old in Maryland whose son "came home from school and proclaimed that when he grows up he is moving to Arizona and going to join your organization to help stop poachers." She

would like more information to support his interest. This just raised my enthusiasm about what we do to a new level.

We have a new Treasurer, Cathy Robson, who has stepped up to fill out the remaining term of Linda Bartlett. We appreciate and express our thanks for the years of service by Linda. Cathy and Linda transitioned at the end of Sonoran XII which was perfect timing if that is possible. I have just received the final financial statement from Cathy for Sonoran XII. We made \$5,349.85. On to Sonoran XIII?

Our member and my friend, Dr. Paul Myrdal passed away last week after a long battle with cancer. Paul was a faculty member at the College of Pharmacy and in the early days of our rescue program developed a purple colored aerosol that we used to mark the south side of rescue plants. Our sincere condolences to his family.

Hot weather is upon us, so take all the precautions that you know so well and stay cool and hydrated.

Thank you for your support.

Dick Wiedhopf, President



## DID YOU KNOW?

There is evidence of Agave DNA in our genes! Well, at least this appears to be true in the case of Pima Prickly Park volunteer Linnea Gentry! Linnea is responsible for the planting, watering, and overall development of the Agave Garden in the park. Her father was renowned botanist

Howard Scott Gentry who has been recognized as the world's leading authority on agaves. (Please refer to [www.art-botanical.org/Bio\\_\\_Gentry1.html](http://www.art-botanical.org/Bio__Gentry1.html) for fascinating background information.)

Linnea shared that she had accompanied her father from the time she was "two feet tall." She was named after the Swedish naturalist Carl Linnaeus, and she developed a particular fondness for agaves. "I was doomed from birth, as my father was a desert botanist!" Even so, Linnea stated that she "rebelled" from following in her father's footsteps and went into publishing. Her first job was with EP Dutton Publishing in New York City. In 1983, she came to Tucson and worked at the University of Arizona

Press. She later worked at *Rio Nuevo Publishing* in Tucson until 2000. Leaving the publishing world behind, she was hired at Bach's Cactus Nursery where she worked for nine years. She had returned to plant care... in the Sonoran Desert!

*On a personal note:* Linnea is an avid hiker. She is married to a physicist, originally from the UK, who enjoys mountaineering. Linnea's background also includes family ranching and farming in California. She and her sister hold the remains of the family homestead and have plans to develop it into an environmental center for research and education.



Once again, Pima Prickly Park is so very fortunate to have such a dedicated and passionate volunteer! Please stop and visit the Agave Garden while you are in the park...and perhaps ask Linnea about the javelinas!

# FROM THE FLORILEGIUM

Flowers in the Fabaceae, or legume family, are highly diverse in appearance, from the tiny florets in a mesquite tree's catkin to the radiant stamens of the Baja fairy duster's flower. There are (at present) six subfamilies in the legume family, and each produces distinctly different flowers. Even within a subfamily, the flowers can look very different to an untrained eye.

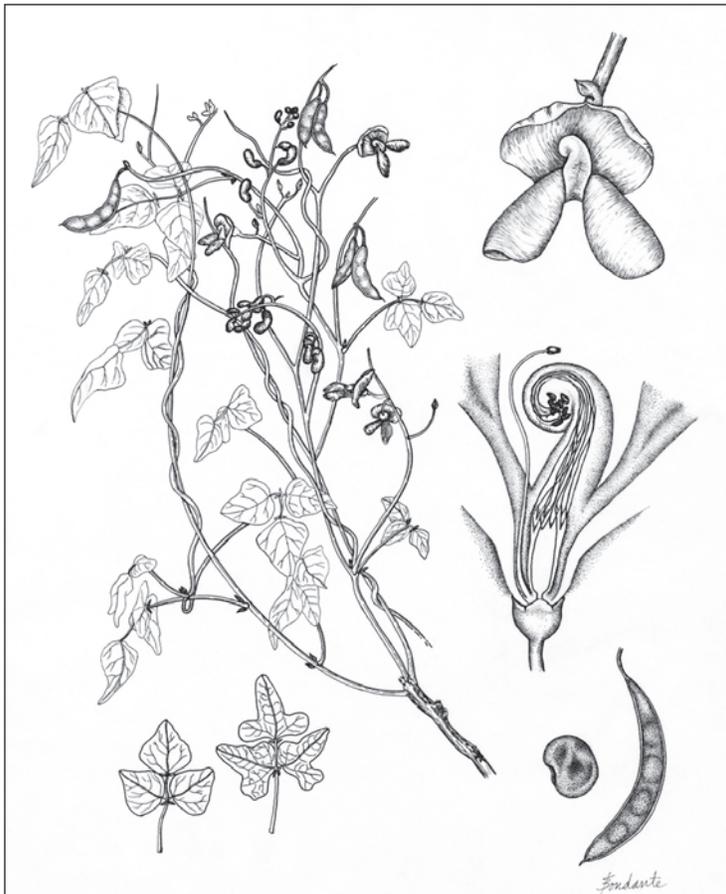
The Sonoran Desert Florilegium includes several of the legume illustrations prepared for the upcoming book, "Legumes of Arizona: An Illustrated Flora and Reference", and those plants all fall within two Fabaceae subfamilies, the Papilionoideae (the butterfly flower subfamily with some 14,000 species) and the Caesalpinioideae (the peacock flower subfamily with roughly 4,400 species). So far this year, we've looked at Margaret Pope's illustration of brazilwood, *Haematoxylon brasiletto*, and Susan Ashton's Mexican palo verde, *Parkinsonia aculeata*, both from the subfamily Caesalpinioideae. Last month we looked at John Gerdes's drawing of *Clitoria mariana*, the butterfly pea, from the Papilionoideae subfamily. Another group of plants from the Papilionoideae is the genus *Phaseolus*, the New World's wild bean.

*Phaseolus grayanus*, or Gray's bean, is a beautiful Sonoran Desert native that can be found at higher elevations to 8,500 feet. It has a trailing habit, striking trifoliolate leaves with silvery markings along the veins, and, from July to September, deep pink flowers. The fruit is a curved seed pod whose shape is aptly described by the name of the genus that is derived from the Greek phaselos, or "little boat". The plant was named in honor of Asa Gray (1810–1888), professor of botany at Harvard and America's preeminent botanist in the 19th century.

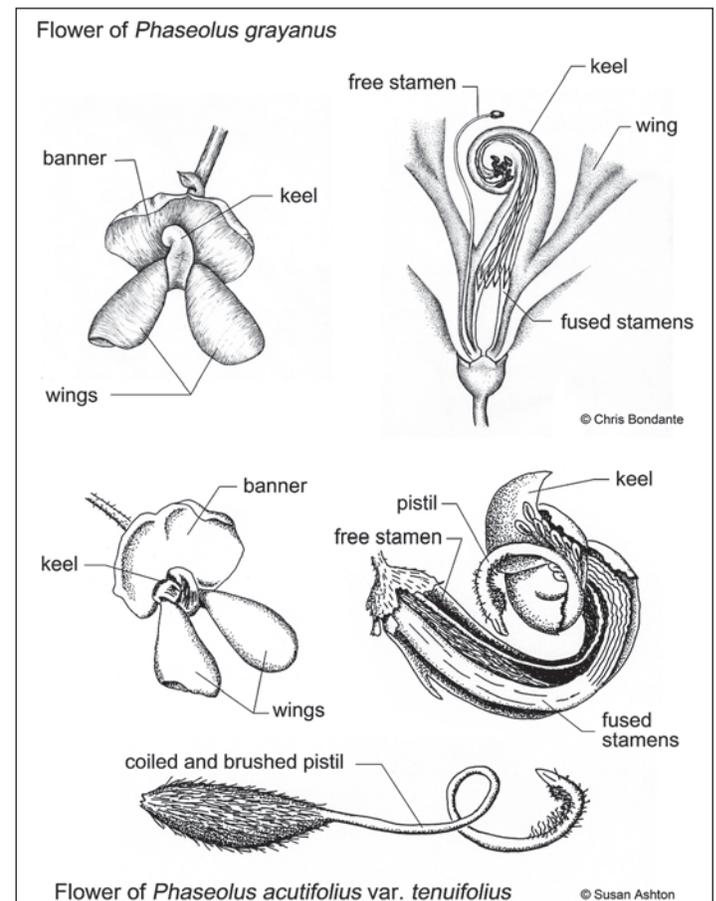
The illustration of *Phaseolus grayanus* shown here is by Tucson artist Chris Bondante. At top right is a drawing of the flower that is the typical form for the Papilionoideae: a five petal structure with a large banner petal at the top; two wing petals on the sides; and a central keel, two petals that are partially joined to enclose and protect the stigma and anthers. Below that drawing is a vertical section of the flower that shows the stamens (male) and pistil (female) within the keel. Nine of the stamens are fused into a tube with a tenth "free" stamen standing apart from the other nine. This arrangement of the male structures is referred to as diadelphous and is common in the Fabaceae.

Beside Chris's illustration of *Phaseolus grayanus* is a comparison of the flower of that plant with the flower of *Phaseolus acutifolius* var. *tenuifolius*, the tepary bean, by Susan Ashton. The flowers appear very similar but there is variation in the reproductive structures and the keel. The tepary bean has a more tightly coiled keel, and within the keel, the pistil is also coiled and has a brushed tip, a pollination strategy that allows the pistil to extend from the keel and brush pollen from the anthers onto the pollinator.

Susan Ashton's complete illustration of the tepary bean can be seen on the Florilegium Program's website, along with another tepary bean, *Phaseolus acutifolius* var. *latifolius*, by Wendy Hodgson. Also on the website is an explanation of how to create a botanical illustration, based on Chris Bondante's process for illustrating *Phaseolus grayanus*. Included in the presentation are several photographs of the plant that provide the color information missing from the pen and ink drawing. Links can be found on the Florilegium Program's home page ([www.art-botanical.org](http://www.art-botanical.org)).



*Phaseolus grayanus*, Gray's bean, © 2012 Chris Bondante, Pen and ink



Flower of *Phaseolus acutifolius* var. *tenuifolius*

© Susan Ashton



**Cacti Rescued - Since 1999**  
**400 Rescues - 30,592 Volunteer Hours**

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## June 2018

**Thursday, June 7, 2018 at 7:00pm**

"Sowing Cacti: where Art and Science meet"  
Presented by Michiel Pillet

**Tuesday June 12, 2018 at 7:00 pm**

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

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### General Fund

Debra Golden-Davis  
Kendall Bert & Family  
Steven Marder  
Pima Prickly Park  
Richard & Patricia Wiedhopf

### Plants For Pima Prickly Park

Dave Siegel  
Christian K Monrad  
Chris Bondante & Family  
Christina Biggs  
Karen Herhold  
Gene Murphy  
Dave Palzkill

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**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Saturday, June 23, 2018**

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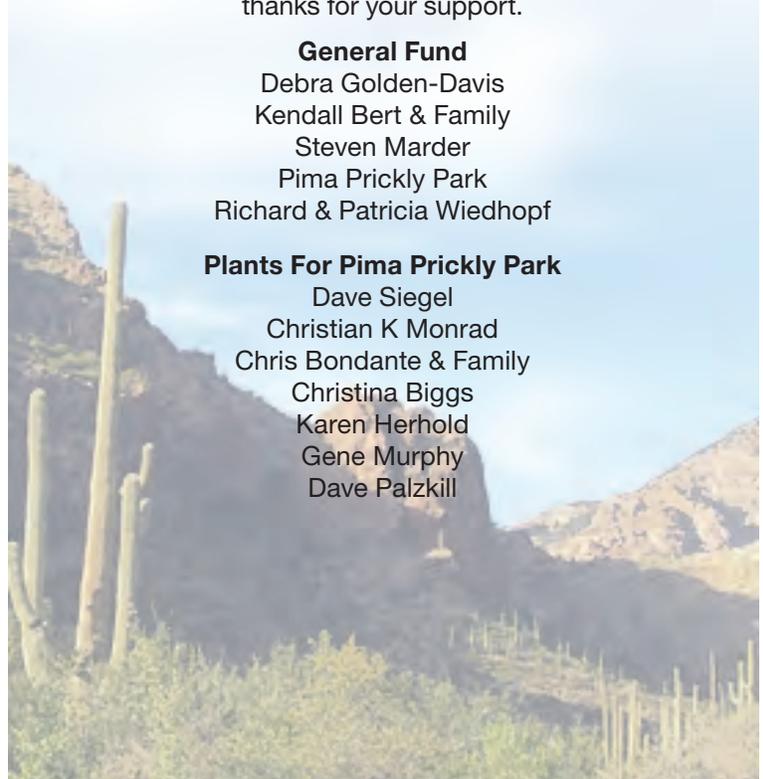
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**Everyone is Welcome!**

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





# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

July 2018

Thursday, June 5, 2018 at 7:00pm

## Using DNA to help sort out Adenium species

Presented by Mark Alan Dimmitt and Taylor Edwards



Arab Ruby88005



Arab Photo by Bob Webb22

How many species of Adenium are there? DNA analysis sheds light on the question

Adeniums are succulent plants native to Africa and the Arabian Peninsula and which are popular ornamental plants. Most botanists recognize 10 or 11 species, but both the taxonomy and nomenclature of this genus are unresolved. In fact, both are a mess. On the taxonomic side, we don't know how many species there are. Semi-spoiler – there is more than one species, but almost certainly fewer than 10. As for nomenclature, at least two “species” (arabicum and obesum) have invalid names that need to be corrected.

TCSS and CSSA funded a DNA analysis to help resolve these issues. We sequenced five loci (sections of chromosomes) of 43 cultivated Adenium specimens, mostly from known wild localities representing nine morphologically described species. In addition, we tested several additional specimens of unknown or hybrid origin. The results indicate that most of the currently recognized taxa are indeed valid species, while some others are probably not.

This was a preliminary study, and the project is ongoing. The DNA results will be correlated with physical character measurements and geographic distribution data to help settle the questions. Sequencing of more specimens is needed, as well as more field observations. The latter may be a difficult task. The least studied and understood Adenium populations are in countries that are not safe to travel in, such as Somalia, Yemen, and Mali.

Mark A. Dimmitt has a Ph.D. in biology (herpetology) from the University of California at Riverside after earning an M.S. from UCLA and a B.S. from Pomona College. He worked at the Arizona-Sonora Desert Museum from 1979 to 2011, first as Curator of Botany, and eventually as Director of Natural History (field ecologist). His areas of research included botany and vertebrate biology, and he is the author of more than 50 scientific and popular publications about ecology and horticulture. He is a Fellow of the Cactus and Succulent Society of America. His major publication is the plant and ecology chapters of *A Natural History of the Sonoran Desert* (2000), and is the senior editor of the revised edition (2015).

*Continued on page 2*

**Thursday, August 2, 2018 at 7:00pm**  
**The Art of Naming a Species: Can They Really do That?**  
Presented by Greg Starr

## July Meeting Refreshments

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



### President's Message

One of the last founding members of the Tucson Cactus and Succulent Society passed away on May 30. Clint Jarvis was 93. There will be a celebration of life on Sunday, July 15, at 4:00 p.m. in McBride Hall at Grace St. Paul's Episcopal Church, 2331 E. Adams St. We are one of the organizations named to benefit from donations in his honor. I will be

representing the Society at this event.

The one day of rain has done wonders for all our plants and the surrounding desert. You have to be a part of this place to see the transformation. Ocotillos leaf out, mammillaria grahamii blooms, limber bush (Jatropha) comes alive. It's spectacular.

I hope many of you were able to go to the Pima County Native Plant Nursery at Pima Prickly Park to see up close and FREE the super collection of Peniocereus Greggii (Queen of the Night) in bloom. Many thanks to our members and manager of the Nursery Jesse Byrd for hosting this event.

I hope you went to the July 1 rescue sale. We had a great inventory of plants from recent rescues and donations.

Hopefully, we will have a similar selection for the Blooming Barrel Sale on August 12. Check the newsletter for details, but be sure to put this on your calendar and invite friends and neighbors to the sale.

Many thanks to National Gypsum mine near Wiklemann, Az and Pulte Homes in Dove Mountain for supporting our rescue program and providing us with the opportunity to save 1000s of native cacti and succulents.

We need your help. Our long time secretary Susan Durham will not be continuing in that role when her term ends on 12/31/18. It is a 2 year term and involves taking minutes at board meeting and related duties.

Also, our librarian Joie Giunta is seeking an assistant to be trained to take over the library responsibilities. Joie has been in charge for more than a decade and has made it possible for everyone to easily access our library with the barcode on your badge.

Please give some thought to these opportunities and let me know your interest.

Thank you for all your support,

Dick Wiedhopf, President

*Continued from page 1*

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



*mult-John Bliznak*



*ob BigMama01*



*soc-Bob Webb 1236*

# FROM THE FLORILEGIUM

To continue last month's survey of flowers of the legume family, here are drawings of two plants in the Fabaceae subfamily Caesalpinioideae, the peacock flowers. Last month we looked at flowers of the subfamily Papilionoideae, specifically two species of *Phaseolus*. The flowers in this group have a unique arrangement of five petals, each with a specific function: the banner petal is generally larger than the others and serves to attract pollinators; the two wing petals on each side serve as a landing platform for pollinators; and two partially joined keel petals at the center enclose the male and female reproductive structures (for a diagram, see Desert Breeze June 2018). Not only do the flowers of the Caesalpinioideae look very different from the Papilionoideae's pea-like flowers, there is also much variability of appearance of the flowers within the Caesalpinioideae.

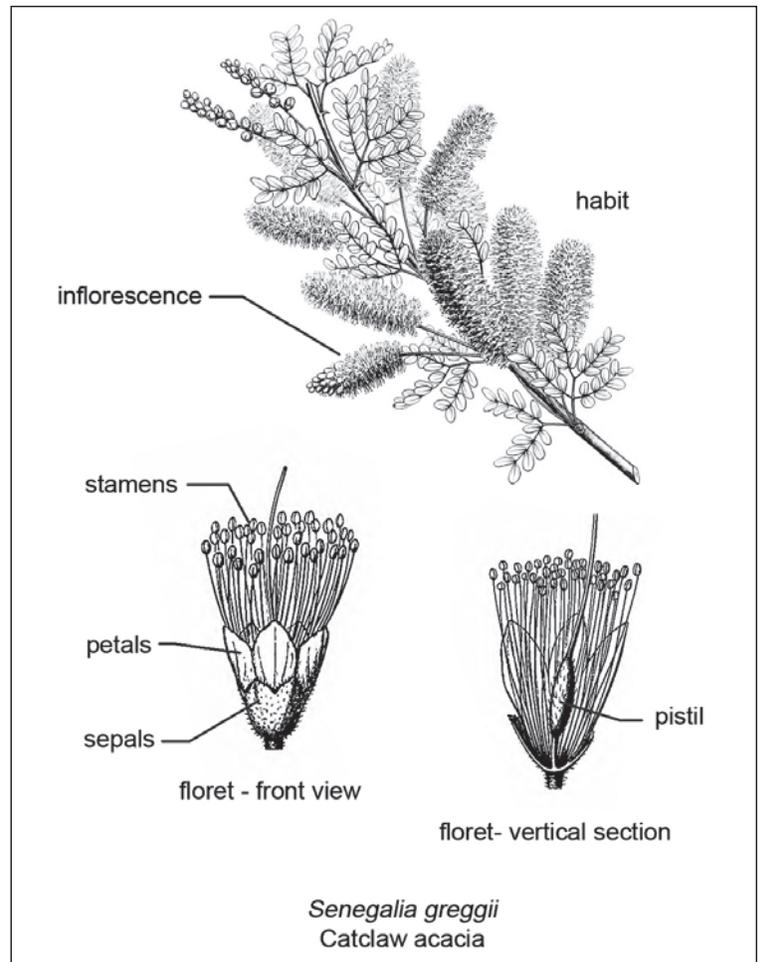
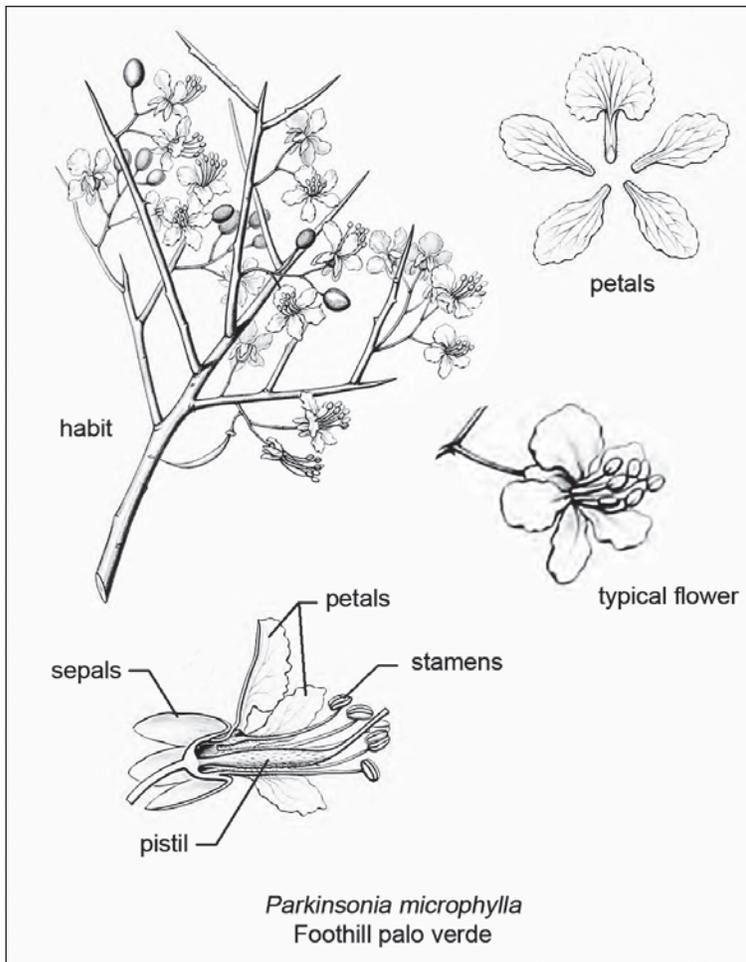
The drawings here are of two of our area's common trees, the foothill palo verde, *Parkinsonia microphylla*, and the catclaw acacia, *Senegalia greggii* (formerly, *Acacia* ). The palo verde flower has a simple five-petal arrangement, with all the petals roughly the same size except for a slightly smaller uppermost petal that is white, yellowing with age. Flowers of catclaw acacia are actually florets clustered together on a dense catkin-like inflorescence. The floret's petals are fused and resemble a small cup.

The male reproductive structures of these two species are very different from those of the papilionoids. Stamens of

the *Phaseolus* flowers are fused into a tube, while stamens of the caesalpinoids are distinct and not connected to each other. Foothill palo verde flowers have 10 distinct, or separate, stamens. The catclaw acacia flower has numerous distinct stamens that extend well beyond the petals, much like stamens of the fairy duster flower. (Both the *Senegalia* and *Eriophylla* genera were formerly in the legume subfamily Mimosoideae.) With these mimosa-type flowers, the stamens are very prominent and sometimes quite showy while the petals and sepals are mostly inconspicuous.

Illustrations of plants in the Caesalpinioideae that have been included previously in the Desert Breeze are Chris Bondante's *Senna lindheimeriana* (Nov. 2016), Susan Ashton's *Parkinsonia microphylla* (Jan. 2017), Margaret Pope's *Haematoxylon brasiletto* (Feb. 2018), and Susan Ashton's *Parkinsonia aculeata* (Apr. 2018). These drawings can be viewed in detail on the Florilegium Program's website. There is a link on our home page to all of the legume drawings in the Sonoran Desert Florilegium that were prepared for the upcoming book "Legumes of Arizona: An Illustrated Flora and Reference" ([www.art-botanical.org](http://www.art-botanical.org)).

The illustrations shown here are from Volume 3 of "The Silva of North America" (1892) by Charles Sprague Sargent, with illustrations by Charles Edward Faxon. Images are used courtesy of the Biodiversity Heritage Library ([www.biodiversitylibrary.org](http://www.biodiversitylibrary.org)).



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



**Cacti Rescued - Since 1999**  
**400 Rescues - 30,592 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## July 2018

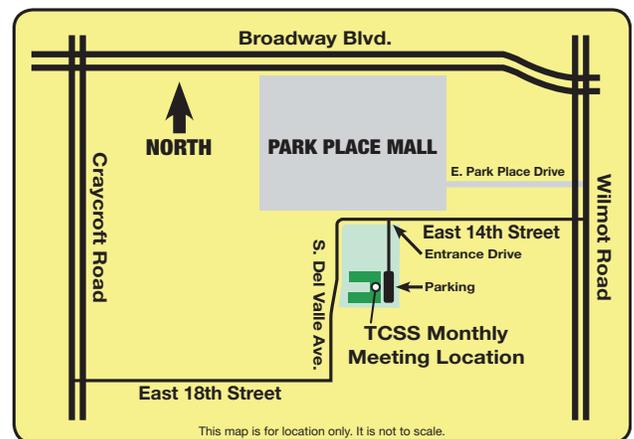
**Thursday, July 5, 2018 at 7:00pm**

"Using DNA to help sort out Adenium species"

Presented by Mark Alan Dimmitt and Taylor Edwards

**Tuesday, July 10, 2018 at 7:00 pm**

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



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

## 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

David Chavez

### Pima Prickly Park

David Palzkill

Dave is retiring from his nursery business. Some of the wonderful and unusual cactus and succulents that he has grown have been donated to benefit Pima Prickly Park. Thank you for your generosity.



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

August 2018

Thursday, August 2, 2018 at 7:00pm

## The Art of Naming a Species: Can They Really Do That?

Presented by Greg Starr



Have you ever wondered how a new species gets named and described? Greg has had a little experience with the process in describing some Hesperaloe species and Agave species and will shed some light on the secret world of botany. For the past 20+ years, Greg has been especially interested in the genus Agave although he has dabbled in other plants, succulent and non-succulent, as well. The genus Agave

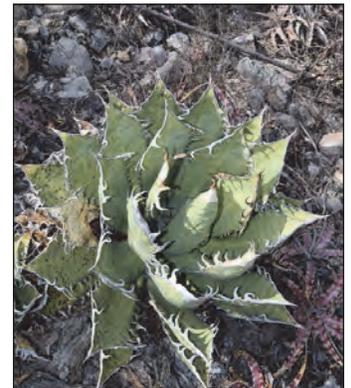
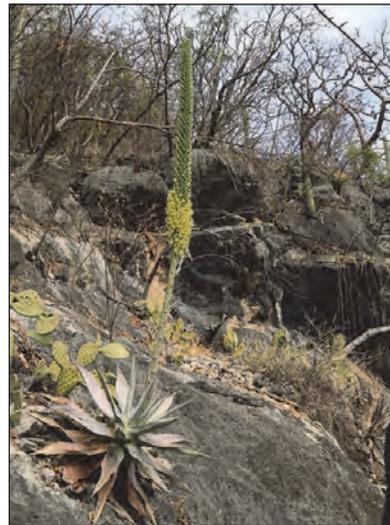
is a relatively young one as far as plants go and seems to be in the process of speciating as we speak. In 1982, Howard Scott Gentry published his monumental monograph on the Agaves of Continental North America, in which he delineated a total of 136 species, 25 subspecies, and 29 varieties for a total of 190 recognized taxa in Agave sensu stricto, or in the strict sense, which does not include the genus Manfreda. Since publication of Gentry's book, there have been a total of 41 new species described or pulled out of synonymy and elevated back to species status. Some of the new species described are very localized while others are a result of splitting up some seemingly highly variable species.

In the past three years, Greg has traveled three times to Oaxaca, thanks in large part to funding by TCSS, to study the question of variability in Agave titanota. This has led to a larger study of the agaves in the Marginatae group, that is the one with a continuous woody margin, and to some other, very interesting side projects, including one which will be presented next month. The results of the Agave titanota project are still a long way off as the DNA sequencing still needs to be conducted and then the analysis will need to be performed.

Greg has both a BS in Plant Science and an MS in Botany/Plant Science from the University of Arizona. While working on his MS degree, Greg worked at the University herbarium under the tutelage of Dr. Charles T. Mason. It was there he learned the details of taxonomy and nomenclature and honing his skills at plant identification using botanical keys. For his MS, Greg blended his love of both horticulture and botany to produce a thesis covering the species of Salvia that had been in cultivation since 1900. Greg opened a small, native or near-native plant nursery in July 1985 and although he had an interest in cacti and succulents, it took several years for that interest to become an infection causing him to produce his book, Agaves: Living

Sculptures for Landscapes and Containers, and to be a co-author on the Field Guide to Cacti & Succulents of Arizona. Currently, Greg spends the heat of summer days in the relatively cool environment of his house sitting in front of the computer hoping that a random assault of his hands on the keyboard will result in article for the CSSA journal or another book.

Please be sure to clear your calendar for Thursday, August 2, and join everyone at an excellent evening of friends, fun, books, raffle plants, free plants and lots of excellent refreshments. You will really enjoy Greg's program so, do not miss it!



Thursday, September 6, 2018 at 7:00pm  
**The Trail of the Unknown: Adventures in Discovery**  
Presented by Tristan Davis

## August Meeting Refreshments

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



## President's Message

At the time of this writing we have 1,271 members. This is an astonishing number and your support of what we do is amazing. In order to constantly increase our numbers more and more members have stepped up to leadership positions. It has never been a demand that any member has to do or be something. Perhaps that is why we have been successful. Those of us

who want to give our time (and money) to certain activities are rewarded by the fact that most of the membership appreciates the effort. That's the way it should be.

Our membership costs are minimal and the benefits are huge. The interesting thing is the more you participate in Society activities the more benefits you receive. If you just come to the monthly meetings you can get free plants from other members and sometimes nurseries. There are door prizes and raffle plants that you can win and if you stay to the end you get a very nice free plant. There is also a great speaker and wonderful refreshments at every meeting.

If you just participate in rescues the benefits are huge. This is always a wonderful experience whether you are a novice or an expert. It is an educational experience that can't be had anywhere else. It is hard work but you get to buy plants at Arizona Native Plant tag cost and make it possible for the Society to pay for all the benefits from money earned from the sale of rescued plants. Of course the most important aspect is

that you are saving these plants from destruction and they are being returned to the Sonoran Desert environment.

The Sonoran Conference, the Good time silent auction, and the holiday party are just three events that you can't afford to miss. Great food, great plants and great people. Did you buy the Field Guide? What a great effort a few members and friends did to produce such an outstanding book.

For many of us Pima Prickly Park is a labor of love. It will be our lasting tribute to the Society and the community who can visit for free and enjoy and learn about cacti and succulents. Our relationship with Pima County and its Native Plant Nursery is fantastic. That is the only adjective I can come up with. More and more members are donating plants and their time to this effort and the results are evident. We are bringing to life this 7.4 acres. Come out and play in the dirt with us.

But, if all you do is join every year as a way of saying we support what you are doing that is really great and important and makes what we do even more rewarding. On behalf of the Society, I sincerely thank you.

All of this makes it possible to support educational grants to K-12 and research grants to projects that benefit our knowledge.

**DON'T FORGET THE BLOOMING BARREL SALE, AUGUST 12, 2018.**

Thank you for all your support,

Dick Wiedhopf, President

## Annual blooming barrel sale

**Rescued Barrels, Saguaros, Hedgehogs, Pincushions, small Ocotillos plus Adeniums, Hesperaloes & Pedilanthus**

**Sunday, August 12, 2018 • 7:00am to 9:00am**

**4342 N 4th Avenue (between Wetmore and Limberlost)**

**Member vendors will be selling other cactus and succulents starting at 6:30am**

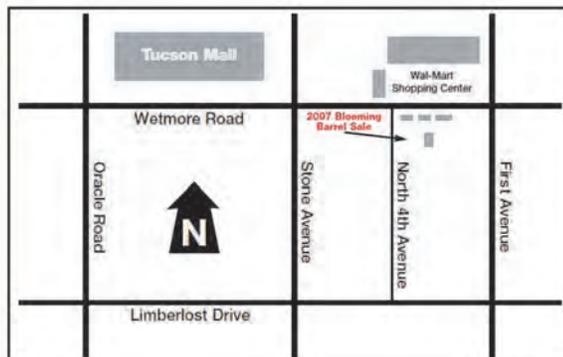
**Blooming Barrel Sale Start at 7:00am**

(Numbered entry tickets will be given out starting at 6:00am to make the sale more manageable)

Come Early For Best Selection

We have barrel cactus –all sizes-blooming now-yellow, orange and red; newly rescued Saguaros to 4ft; small Ocotillas; Pincushions (*Mammillaria grahamii*)-spectacular ring of pink flowers at the start of the monsoons. 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.

Copies Of Our "Field Guide To Cacti And Other Succulent Of Arizona" Will Be Available For Purchase At This Sale. Thank You For Your Support Of Our Rescue Program



**For membership and more information check out our website at: [www.Tucsoncactus.org](http://www.Tucsoncactus.org)**

**Tcss Cell: 256-2447**

## FROM THE FLORILEGIUM

After crisscrossing the globe in the 18th and 19th centuries, British and European plant hunters returned home with their new exotic plants preserved in alcohol, planted in boxes, or pressed between sheets of paper. Drawing these plants from pressed or otherwise preserved specimens became a necessary skill for the botanical illustrator, and some, such as the artists of “Curtis’s Botanical Magazine”, became highly skilled in drawing from non-living specimens. The great British botanical artist Walter Hood Fitch wrote that drawing from a live specimen was merely copying what you see but that working from dried specimens would “test the artist’s ability to the uttermost.” It was a valuable and highly respected skill.

The situation was no different in the 19th century American West. Plants collected and transported over great distances would by necessity be dried, pressed specimens, and the artists charged with illustrating them would need considerable skill to turn these shriveled, flat specimens into vibrant, three-dimensional representations.

During the mid-19th century explorations of the western U.S. and Mexico, several plant collectors came upon the remarkable ‘Queen of the Night’ cactus and sent specimens to botanist George Engelmann in St. Louis. By 1859, he had received specimens of the cactus from West Texas, Arizona, Sonora, and the area of the Rio Grande south to Chihuahua.

Although a number of collectors had sent Engelmann specimens of the cactus, he chose to name the plant *Cereus greggii* to honor Josiah Gregg, the only collector to have provided him with a complete flower:

“The specimens sent for cultivation by Dr. [Wislizenus] were unfortunately dead when they arrived here, and neither flower

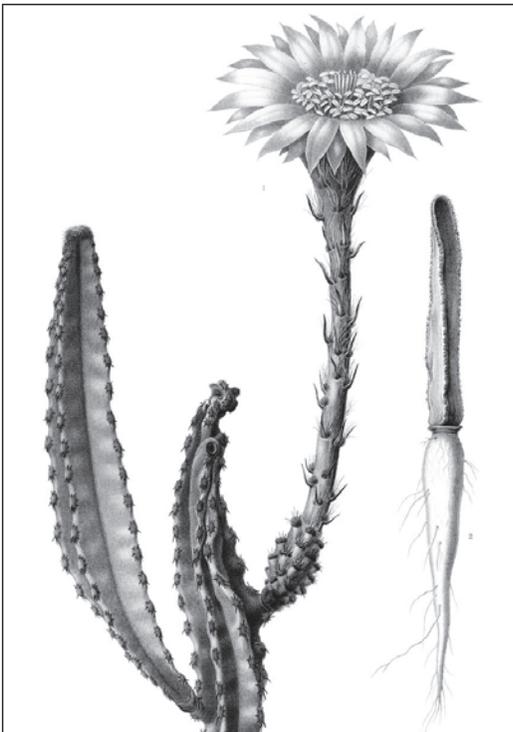
nor fruit had been obtained; but Dr. Gregg has collected the same species near Cadena, south of Chihuahua, in flower, from which I completed the description. I could not have given it a more appropriate name than that of the zealous and intelligent explorer of those far off regions.”

By mid-century, only one drawing of *Cereus greggii* had been published—a somewhat rough sketch drawn by John Mix Stanley in 1846. A more refined drawing of the cactus didn’t appear for another 13 years when Engelmann’s 1859 “Cactaceae of the Boundary” was published. Three drawings of *Cereus greggii* were made by Engelmann’s friend, Paulus Roetter, with superb steel engravings prepared by Philibert and Eugène Picart of Paris.

Included here is the Roetter/Picart engraving of the *Cereus* flower shown alongside the actual flower collected by Josiah Gregg in 1847. A close look at the two images indicates that this is the plant material used by Roetter to compose his drawing. While Roetter may have had living stems to work from, he drew the flower from a dried specimen that had traveled from Mexico to St. Louis.

A note about classification: In 1909, Engelmann’s *Cereus greggii* was renamed *Peniocereus greggii* by Nathaniel Lord Britton and Joseph Nelson Rose. Josiah Gregg’s name remains bound to the plant, and next month we’ll look at the extraordinary life of the “zealous and intelligent” Dr. Gregg.

The Florilegium Program’s website has a “*Peniocereus* Page” where you can see Stanley’s sketch of the cactus along with Roetter’s three engravings, works by Lucretia Hamilton, Ella Estill, and Margaret Pope. You can find the link on our home page ([www.art-botanical.org](http://www.art-botanical.org)).



*Cereus greggii* Illustrator: Paulus Roetter “The Report on the United States and Mexican Boundary Survey” Major William H. Emory, 1859 Vol. II “Botany of the Boundary. Cactaceae” Image courtesy Cactuspro. [www.cactuspro.com/biblio](http://www.cactuspro.com/biblio)



*Peniocereus greggii* (previously *Cereus greggii*) Image courtesy of Tropicos, botanical information system at the Missouri Botanical Garden [www.tropicos.org/Image/2874](http://www.tropicos.org/Image/2874)

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**For additional information call:** (520) 256-2447

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



**Cacti Rescued - Since 1999**  
**400 Rescues - 30,592 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## August 2018

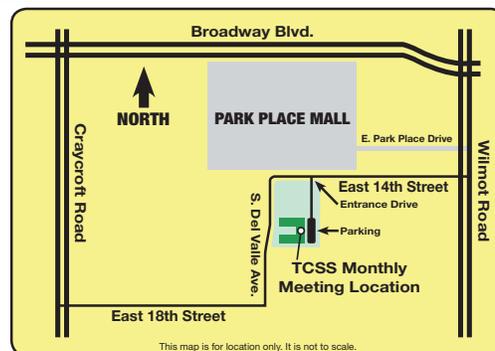
**Thursday, August 2, 2018 at 7:00pm**

"The Art of Naming a Species: Can they Really Do That?"

Presented by Greg Starr

**Tuesday, August 14, 2018 at 7:00 pm**

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



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

## 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

David Chavez

### In Memory of Clint Jarvis

Dick & Pat Wiedhopf

### Pima Prickly Park

Dick & Pat Wiedhopf

### In Memory of Ray Topp

John & Janice Topp Family  
Leyla Lara • Dick & Pat Wiedhopf

## In Memory

Raymond W. Topp was suddenly taken from us on Friday afternoon, July 20th, 2018 of Cardiac Arrest in Tucson, Arizona. Ray was an important part of our rescue crew. We send our sincere sympathy to his wife, Jenny and all the members of the Topp family and friends.



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

September 2018

Thursday, September 6, 2018 at 7:00pm

## The Trail of the Unknown: Adventures in Discovery

Presented by Tristan J. Davis



Have you ever wondered what it is like to do botanical field work? How about field work in places where you are pretty sure no one who knew the plants has ever been before? Well, buckle up, because we are going to follow the best trail of all: The Trail of the Unknown. Tristan was honored to be invited to participate in botanical field work in 2017 by our very own Greg Starr to study – you guessed it – Agaves. And, for Tristan, who has spent over 30 years on scientific expeditions across the globe, this was his first botanical expedition.

Tristan will take you on his first trip with Greg to a potential study site for his agave research – a site secluded and difficult to reach: surely a site unknown botanically. And, of course, because Tristan's primary botanical interest is cacti (though Greg's influence is significantly making his interests shift a bit towards agaves), he was like a little kid in a candy shop the entire time. Cacti were around every corner...and under every foot! Tristan will show you the different plants he discovered



along the way – ones he knew, ones he didn't (but others did), and ones that...well...no one really knew! It truly was an Adventure in Discovery!

Born into a very "outdoorsy" family, Tristan was introduced to the natural World at a very young age. His initial interest was specific to South American birds, and subsequent education at Louisiana State University and the University of Kansas allowed him to accompany scientific expeditions to most South American countries, as well as China, the Philippines, and Equatorial Guinea. It was obvious early on in his travels that Tristan much preferred those locations with less humidity (western Peru, the pampas of Argentina, etc.), and this was a significant reason he moved with his husband to Arizona in 2001. Once arriving in Arizona, Tristan readily transitioned his scientific passions to cacti and succulents, and although Tristan has authored numerous scientific publications related to ornithology, he published his first paper on desert succulents in 2011 in the Cactus & Succulent Journal. As most people know, Tristan's botanical passions are primarily centered around South American columnar cacti and the species of ocotillo (*Fouquieria*). Additionally, he continues to accompany

*Continued on page 2*

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**Thursday, October 6, 2018 at 7:00pm**  
**The Tropical Deciduous Forest: Where cacti became succulent, and other biological explorations in Sonora**  
Presented by Robert A. Villa

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## President's Message

Another planting season is approaching. Summer heat is almost over and it's time to have fun with our gardens. It is a great time for plants in Tucson.

This is why, for more than 50 years, we have a good time silent auction event. I always look forward to this as an opportunity to share plants and

acquire new ones. It usually means that I bring home more plants than I get rid of but that's me. Please read all the information in this newsletter about the Good Time Silent Auction. It is a lot more than just another silent auction. Here is your opportunity to give away plants, pots etc, Provide items that will help sustain the financial health of our society and most important ice cream and all the toppings. Sunday, September 16, set-up starts at 1:00pm (always need volunteers) and the auctions start at 3:00pm. Family and friends are always welcome.

Donations to our society have always been important and support the many different activities in which we are involved. The new Tax Laws have changed some of the benefits of giving. In the next newsletters, we will try to update you on some of the issue surrounding donations to non-profits. We haven't changed our dues for more than 2 decades and really don't plan on changing them because of your generosity and

volunteerism. When you add up all the free plants, rescue plants, speakers, food and other activities, it is the best deal in town and the Board and Officers want to keep it that way.

This year we will be electing 4 Officers (2 year terms) and 4 board members (3 year terms). A nominations committee will be elected at the September Board Meeting and will be securing nominees for officers and board members. Please consider running for office. We will introduce the nominations committee in the October newsletter and at the meeting so you will be able to contact them about your interest in serving. The Committee will make their report at the November meeting and will also take appropriate nominations from the floor. Voting will be by mail ballot that will be sent out with membership renewal and holiday party information in mid-November.

This is also the time of year for many Botanical Gardens and other organizations to hold their fall plant sales. Please support them!

We are working on updating our member nurseries, businesses etc. on our website. We hope to have this information posted very soon. Please let us know about your nursery or garden business and the benefits to TCSS members. Please send that information to me.

Thank you for all your support,

Dick Wiedhopf, President

*Continued from page 1*

scientific expeditions to locations around the World hoping to again get to some desert-like locations! Tristan currently resides in Chandler, AZ and is a member of the Central Arizona Cactus and Succulent Society; he served on the Board of Directors for the society, and currently

administers the Propagation Education Group (PEG), the Research Grant Program, and the Seed Depot for the society. Tristan also volunteers in the Horticulture, Research, and Education departments at the Desert Botanical Garden.

Please be sure to join everyone at this very special program. Have an excellent evening with friends, fun, books, raffle plants, free plants and lots of great refreshments. Don't miss this evening with Tristan!



## Important Information about emails

TCSS has a new bulk email sender to send emails about the monthly newsletter, special events and cactus rescue crew news. There have been some complaints from TCSS members that they don't receive emails, mostly members with msn.com and yahoo.com email addresses.

To make sure you get our emails, add **news@tucsoncactus.org** to your contact list in your email reader.

For people who are part of the TCSS cactus rescue crew, also add **cactusrescueneeds@tucsoncactus.org** to your contact list.

If you don't see expected TCSS emails, look in your spam, junk and deleted folders, and if you find our emails there, mark them as 'not spam' or 'not junk'.

If you're not sure you're on the TCSS member or cactus rescue crew email list, email **webmaster@tucsoncactus.org** and we'll check our email lists.

If you accidentally unsubscribed from our emails, email **webmaster@tucsoncactus.org** and we'll get you re-subscribed.

## FROM THE FLORILEGIUM

*Salvia greggii*, or autumn sage, the mainstay of many desert hummingbird gardens, is among some forty plants named to honor Josiah Gregg (1806–1850). The plant was first described and named by botanist Asa Gray, in 1873, based on a specimen collected by Gregg, in 1848, in the mountains of northern Mexico near Saltillo.

The illustration here, published in the 1885 volume of “Curtis’s Botanical Magazine”, was painted by Matilda Smith (1854–1926). The salvia specimen used for her painting flowered in October of 1884 at the Cambridge Botanical Garden. (Other paintings by Smith are in past issues of “Desert Breeze”—the saguaro (June 2013) and the titan arum lily (January 2018).

Josiah Gregg’s importance in the history of the American West was not secured through his botanizing, but rather by his 1844 book, “Commerce of the Prairies”, a narrative compiled from the notebooks he kept for nine years traveling the Santa Fe Trail. The book’s title certainly isn’t very enticing, so it’s a nice surprise to find that it is less about commerce and more about the culture of the trail, the people who braved its hardships, and the unspoiled land with all its inhabitants. Gregg’s book was very successful, with 5 reprintings in 10 years, as it had become a valued guidebook for pioneers and adventurers wanting to travel west.

Gregg grew up in western Missouri, eventually settling near Independence, the departure point for merchants en route to Santa Fe. He was largely self-taught and had a mathematical bent with a curious, roving, disciplined mind. When looking for a profession, he considered the law but after a few years found that it didn’t appeal to him, to the point of causing his health to deteriorate.

He became bedridden, and his doctor’s only suggestion was to send him west to the prairies. In the spring of 1831, he set out with a group of traders in a wagon train bound for Santa Fe. Initially, he was unable to sit up, let alone ride a horse, but his health and spirits improved quickly. Gregg remained in Santa Fe until 1833, working as a merchant’s bookkeeper. The following spring, he returned, this time as partner of the merchant.

For nine years this was Gregg’s life. He made four trips to Santa Fe, after which he devoted his time to compiling his memoirs and getting them published. He had traded his invigorating life of travel for the confined life of the writer. As he noted, “Scarcely a day passes without my experiencing a pang of regret that I am not now roving at large upon these vast western plains.”

At some point, either during his prairie years or while writing his book, Gregg became acquainted with Dr. George Engelmann in St. Louis. While we have later correspondence from Gregg to Engelmann, the beginnings of the relationship aren’t documented. But obviously Engelmann, at some point, encouraged Gregg to begin collecting plant specimens from his many travels.

After getting his book published, Gregg spent a year in Louisville, Kentucky, studying medicine. His brother John wrote posthumously that Josiah began these studies “to gratify his passion for science; and in the belief that it might add to his standing in Mexico, where he intended traveling.” So after only a year of studies, Gregg became Dr. Gregg, and he did indeed travel to Mexico. In 1846, at the beginning of the Mexican-American War, he was hired as a general guide and interpreter to accompany U.S. troops into Mexico. After the war, he remained in Mexico and established a medical practice in Saltillo where he also devoted considerable time to collecting plant specimens for Engelmann.

In 1849, with his health beginning to fail, Gregg traveled to California to see the gold rush first hand. He was in San Francisco briefly, where he left his diaries with a friend from his trading days before heading to gold mining settlements on the Trinity River. His family believed him to be working on a government commission to find an overland route from the settlements to the Pacific coast. He headed up an exploratory party of 8 men who endured months of horrendous winter weather, difficult terrain, and lack of adequate food. During all this time, Gregg had become increasingly frail and was often the subject of taunting by the other men, who had no interest in taking scientific measurements or collecting specimens. In February of 1850, in a much weakened state from the continued lack of food, he fell from his horse and died soon after. The remaining party buried him under rocks. His belongings, including his diaries and specimens, were either lost or destroyed by the party.

While Gregg’s diaries of his California travels did not survive, the records that he left in San Francisco were eventually returned to relatives, and, in 1944, they were compiled in a two-volume collection of letters and diary entries spanning the years 1840 to 1850.

What little we know of Gregg’s California travels and his death comes from an account by one of the men of the Trinity party that was not published until 1856. This account by L. K. Wood, “The Discovery of Humboldt Bay” gives general details of Gregg’s death, but leaves the reader wanting to know much more about his final excursion.



*Salvia greggii*, Illustrator: Matilda Smith  
Lithographer: John Nugent Fitch, Curtis’s Botanical Magazine Vol. CXI, 1897



# Good Time Silent Auction Sunday, September 16, 2018

Sky Islands Public High School • 6000 E 14th Street  
3:00pm to 5:00pm

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

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

Bid sheets and price stickers will be available at the event. The Board has adopted the same policy as we had at Sonoran XII with 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 plants that will peak your 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 at 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 thereafter. 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". DO NOT REMOVE PLANTS!

After the last auction, bid sheets will be tallied, posted and must be paid before items are removed from the bid tables. There will be a cashier in the auction room for your convenience.

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. For more information, call (520) 256-2447.

Please bring your plants and other items between 1pm and 2:30pm for inclusion in this event.

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

Thank you

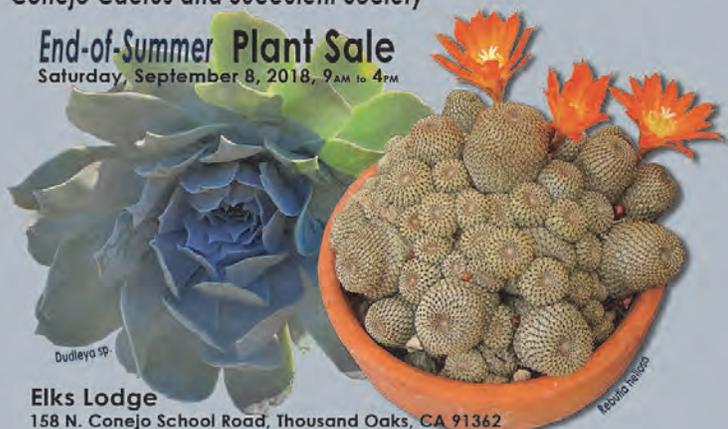
## September Meeting Refreshments

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

Conejo Cactus and Succulent Society

### End-of-Summer Plant Sale

Saturday, September 8, 2018, 9AM to 4PM



*Greg Starr and Tristan Davis*





## **Cacti Rescued - Since 1999 400 Rescues - 30,592 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

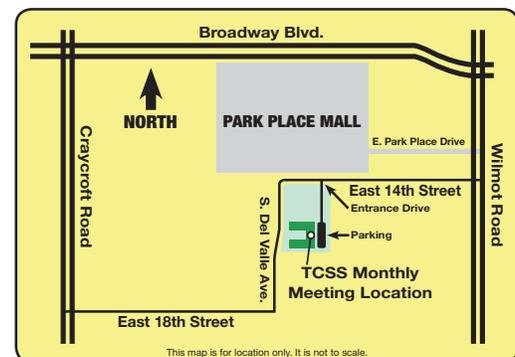
### **September 2018**

**Thursday, September 6, 2018 at 7:00pm**

The Trail of the Unknown: Adventures in Discovery  
Presented by Tristan J. Davis

**Tuesday, September 11, 2018 at 7:00 pm**

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



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

## **Acknowledgement of Contributions**

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### **In Memory Of Ray Topp**

Jennifer Topp  
Jay & Denise Burns  
Ron & Cheryl Klawitter  
Mary Kampschroer  
Deborah White

### **In Memory Of Betsy Karsner**

Dick & Pat Wiedhopf

## **In Memory**

**Betsy Karsner recently passed away. We send our sincere condolences to her husband, Bill and their friends and family.**

### **TCSS BOARD**

#### **Officers**

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

**Secretary:** Susan Durham

[secretary@Tucsoncactus.org](mailto:secretary@Tucsoncactus.org)

**Treasurer:** Cathy Robson

[treasurer@Tucsoncactus.org](mailto:treasurer@Tucsoncactus.org)

#### **Board of Directors:**

[board@Tucsoncactus.org](mailto:board@Tucsoncactus.org)

(terms expire December 31 of year indicated)

Steve Chesser (2020)

Donna Ellis (2020)

Bill Salisbury (2020)

Kris Thompson (2020)

Teresa Curtis (2019)

Peter Ertman (2019)

Don Morehart (2019)

Thomas Staudt (2019)

Keimpe Bronkhorst (2018)

John Durham (2018)

Linda Heisley (2018)

Dale Johnson (2018)

#### **CSSA Affiliate Rep:**

Bill Holcombe (2019)

**Cactus Rescue:** Donna Ellis

[cactus@Tucsoncactus.org](mailto:cactus@Tucsoncactus.org)

**Education:** Caryl Jones • [education@Tucsoncactus.org](mailto:education@Tucsoncactus.org)

**Free Plants:** Donna Ellis • [plants@Tucsoncactus.org](mailto:plants@Tucsoncactus.org)

**Floilegium:** Margaret Pope • [art@Tucsoncactus.org](mailto:art@Tucsoncactus.org)

**Librarian:** Joie Giunta • [librarian@Tucsoncactus.org](mailto:librarian@Tucsoncactus.org)

**Prickly Park:** Linda Heisley • [park@Tucsoncactus.org](mailto:park@Tucsoncactus.org)

**Programs:** Vonn Watkins • [programs@Tucsoncactus.org](mailto:programs@Tucsoncactus.org)

**Refreshments:** Patsy Frannea • [refreshments@Tucsoncactus.org](mailto:refreshments@Tucsoncactus.org)

**Technology:** [technology@Tucsoncactus.org](mailto:technology@Tucsoncactus.org)

**Research:** Doug Rowsell • [research@Tucsoncactus.org](mailto:research@Tucsoncactus.org)

**Garden Tours:** Bill Salisbury • [tours@Tucsoncactus.org](mailto:tours@Tucsoncactus.org)

**Field Trips/tours:** Rob Romero/Joie Guinta

[trips@Tucsoncactus.org](mailto:trips@Tucsoncactus.org)

**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**

**Thursday, September 27, 2018**

**TCSS Web Page:**

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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.**



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

October 2018

Thursday, October 4, 2018 at 7:00pm

## The Tropical Deciduous Forest: Where cacti became succulent, and other biological explorations in Sonora

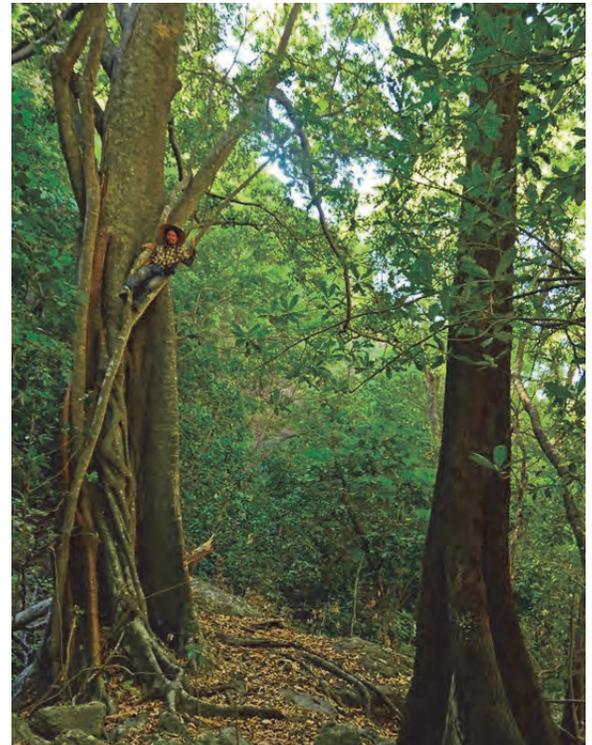
Presented by Robert A. Villa



Robert is a proud Tucsonan deeply in love with the Sonoran region. He has been studying, exploring, and documenting its biological and cultural diversity (often with violin in tow) most of his 32 years. He specializes in amphibians, reptiles, plants, ethno-ecology, and regional gastronomy. He has consulted for and assisted in the production of national and international broadcast television episodes, the 2nd edition of Natural History of the Sonoran Desert, Arizona's Amphibians & Reptiles: A Natural History and Field Guide, and published his findings in academic and popular outlets. He currently presides

Tucson Herpetological Society, assists with ongoing developments at the Desert Laboratory on Tumamoc Hill, is a member of NextGen Sonoran Desert Researchers, and grows plants. He considers himself a follower in the footsteps of Sonoran naturalist explorers such as Howard Scott Gentry, Paul Martin, Charles Lowe, Tom Van Devender, and others, documenting and espousing the land where north and south embrace.

Please be sure to come and enjoy Robert's very special program. Have an excellent evening with friends, fun, books, raffle plants, free plants and lots of great refreshments.



Thursday, November 1, 2018 at 7:00pm

### NAMIBIA

A dry place in a wet time 2011

Presented by Wendell S. (Woody) Minnich



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

## October Meeting Refreshments

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



## President's Message

Another fun Good Time Silent Auction. Thanks to everyone who donated plants etc., volunteered and especially bidders and buyers. Of course the ice cream and all the toppings were the highlight of the afternoon.

## Results of the Good Time Silent Auction:

126 items in silent auction, 92 bidders signed up, 6 items did not receive bids, \$19.55 average price, Silent Auction Sales \$2,346 Total All Sales \$3,596.95

Great article in the current CSSA Journal written by Bill Thornton about our rescue of *Peniocereus greggii* and the "Queen of the Queens", Jessie Byrd. It puts a spotlight on our rescue program, Pima Prickly Park and the Pima County Native Plant Nursery. We have a lot to be proud of.

Everyone needs to stop by Pima Prickly Park and see the extraordinary crested *Opuntia fulgida* at the northwest end of the Cholla Maze. Our rescue crew, led by Ken Byrd secured this very large specimen and was planted at the Park. I asked Ken why he would tackle such a large specimen and his answer was simple: "Saving plants like that from progressive destruction is what my real parents, Father Time and Mother Nature expect of me." Wow!

Election of Officers (2 year terms) and 4 board members (3 year terms) is set for November. The elected nominations committee members are Bill Holcombe, Cathy Robson and Dale Johnson. Please consider running for office. You may contact them at holcombew@yahoo.com. The Committee will make their report at the November meeting and will also take appropriate nominations from the floor. Voting will be by mail ballot that will be sent out with membership renewal and holiday party information in mid-November.

Depending on upcoming rescues, there might be a Halloween Plant Sale. You will be notified by postcard or email if that will happen.

Again, this is also the time of year for many Botanical Gardens and other organizations to hold their fall plant sales. Please support them!

We are still working on updating our member nurseries, businesses etc. on our website. We hope to have this information posted very soon. Please let us know about your nursery or garden business and benefits to TCSS members. Please send that information to me.

Thank you for all your support,

Dick Wiedhopf, President

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## PIMA PRICKLY PARK



### DID YOU KNOW?

The Svalbard Global Seed Vault in the Norwegian Arctic receives seeds for long-term storage from Tucson's Desert Legume Program (DELEP).

I had the privilege of interviewing research analyst Matthew Johnson who is DELEP's Program Manager and Curator. Matt runs the seed bank that is the "heart" of the program. He shared that DELEP is instrumental in preserving legume biodiversity. Established in 1988, the project was the joint venture of the Boyce Thompson Arboretum and the University of Arizona College of Agriculture and Life Sciences. It is unique as its focus is on collecting wild species of legumes in pea or bean families (Fabaceae), not crop plants. As legumes are second only to cereal grains in their importance to human nutrition, it is important to collect and preserve the species. Conservation is essential as human populations are increasing and encroaching on natural plant habitats. The DELEP collection consists of over 4000 species from the southwestern United States and 67 countries. "DELEP serves citizens, businesses, academia and government agencies in Arizona and around the world by providing seeds, plant material and information." Over 1000 requests for seeds from the program have been made since 1989.



Program, 2120 E. Allen Road, Tucson, AZ 55719, (520-647-2503) Matt has traveled extensively around the world to study and collect seeds. He informed me that there are other seed banks with international locations. He shared an interesting fact that the ICARDA seed bank in Aleppo, Syria was not destroyed when ISIS captured the city. ICARDA was able to resume operations at new facilities in Lebanon and Morocco utilizing seeds that had been placed in backup storage at the Svalbard Global Seed Vault. Personal Notes: Matt and his wife Pat Rorabaugh live in Tucson and are members of TCSS. He does botanical illustrations and is on the jury for the Florilegium. He has also co-authored "The Trees of Sonora, Mexico". Born in Chicago, Matt and his family eventually moved to Tucson where he began first grade...and he has lived here ever since. Matt's passion for desert plants began as a child. He said that he was curious and "grabbed hold of a cactus...with predictable results...and it has been downhill ever since!"

What a wonderful experience to speak with Matt and see the collections first hand. It is amazing to learn that right here in Tucson the DELEP program is instrumental in preserving seed species for future generations.

Cari Wright

**From Linda Heisley/Pima Prickly Park:** Many thanks to those of you who have worked tirelessly on Pima Prickly Park during my absence. Your dedication and hard work are so appreciated.

Contact Information regarding seed requests is as follows:  
Matthew Johnson, mjohnson@ag.arizona.edu, Desert Legume



### A. DICK & PAT

Dick caught the gardening bug as a young boy while riding his bike in Beverly Hills on garbage day. Retrieving a large prickly pear pad from the street and planting it at home was the beginning of a lifelong passion for cacti and succulents.

Begun in 1980, this is a classic collector's garden. The goal of a plant collector is to expand the available planting area and add more plants. Once Dick discovers a new plant he acquires as many species and hybrids of it as he can. Another passion is to discover how many plants he can fit in the space he has, while maintaining accessibility and

visual interest. Then he may be on to a new garden focus. For Dick the ultimate enjoyment is the freedom to change his interest and learn about new species. His current focus is Cycads. Look for the handsome collection on the back porch.



Dick's appealing walking paths meander to reveal hidden areas, unexpected ensembles, and a pond. Desert trees create filtered shade to encourage optimal plant health. Judiciously placed metal folk sculptures add humor and whimsy. Greenhouses shelter vulnerable species. He also uses frost cloth as needed in the winter.



Note the climbing milkweed growing up the saguaros on the west side of driveway. A few of the noteworthy plants are whales tongue agave, sharkskin agave, blue glow agave, agave salmania var. ferox, Yucca faxoniana, adeniums, native grasses, fat mammillarias, variegated Echinopsis, and a hanging Queen of the Night.

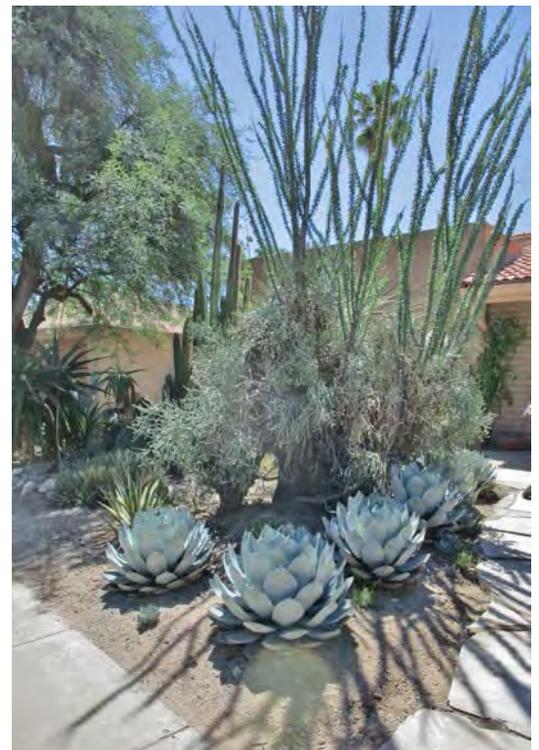
LOT SIZE: .4 acre

SOIL MIX: Tank's Cactus Mix with more pumice and regular cactus soil

WATERING: Waters with hoses and tripod sprinklers as necessary. The timer on his phone frees his mind to enjoy the plants.

PESTS: Keeps a watchful eye out for pests and uses traps and other means when necessary.

TIP: Eliminate dead or sad looking plants. You will look like a great grower! Check out Shady Way Nursery in Apache Junction when you can.



## B. BILL & LU

This garden is, in some small degree, the result of luck. The previous owner was an artist and cactus fancier, the lot is large, and the views are nothing short of splendid. But it's the maximizing of that luck you'll view today. This ridgetop garden has a full southern exposure and is a thermal belt, a foothills zone where freezing temperatures are less likely to occur than they do at either higher or lower elevations. This garden is all about variety, gardening wisdom, and passion.



### VARIETY

Mounding, swales and boulder-placement mimic a desert landscape. There are 45 saguaros ranging from 12" to 5' and more than 150 native barrels, soap tree yucca, Indian fig, Joshua tree and blue yucca. Three seating areas of various heights plus a screened-in-porch, which you may visit today, makes for relaxed socializing. Extensive art work in the form of metal sculptures, over 360 pots, and a waterfall and pond create visual and auditory appeal. Tree variety is impressive providing shade, accent, fruit and bird cover. Among the trees are Mesquite, Texas Ebony, lemon, grapefruit and one of the largest Oleander trees you are likely to see.



### GARDENING WISDOM

This a desert we live in, and the owners pay tribute to this fact with plantings that are 80% desert or desert-adapted. Just as important is scale: So often plants become woody and overgrown; they can overwhelm even the house. Over the 19 years of ownership, Bill Salisbury has not so much designed a garden, as he's refined it. In order to preserve the magnificent view, he has whacked out overgrown pyracantha, oleanders and Texas rangers, largely to replace them with beloved rescued cactus.



### PASSION

In addition to refining and maintaining this garden without a designer or landscape crew, Bill is a Board member of the Tucson Cactus and Succulent Society. The Salisbury garden is a testimony to the fact that a Chicago transplant cannot only create a lovely garden but also contribute to the beauty and ecology of our community. It just takes passion.

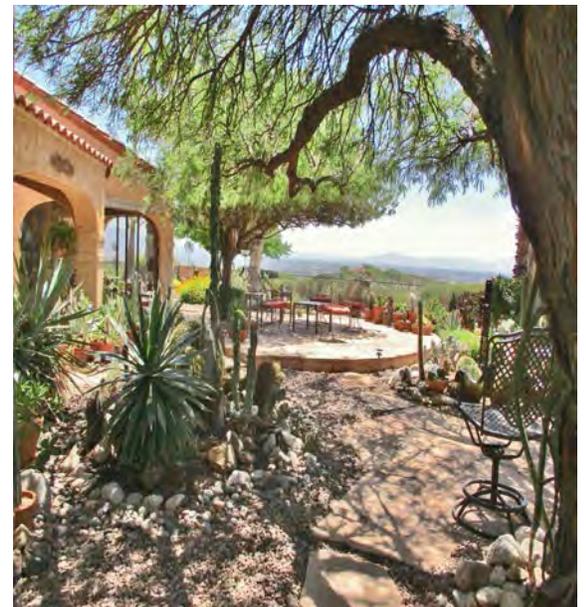


**PESTS:** Ground squirrels continue to be a problem in pots

**WATERING:** Waters as needed, daily for flowers in pots.



**SOIL MIX:** For pots uses 2/3 Miracle-Gro cactus mix and 1/3 perlite.



## C. BETTY & ED

In a mere 15 months Betty and Ed have transformed their previously almost bare yard into a pleasing desert oasis. The gorgeous view to the southwest from their backyard competes with the vibrant landscape they have created.

Betty caught the gardening bug while growing up in Brooklyn where for five years she took the trolley to work her vegetable plot at the Brooklyn Botanic Garden. Growing succulents on a windowsill in her childhood home and visits to the southwest encouraged her interest in cacti and succulents. As president of the North American Rock Garden society, Betty promotes the study and cultivation of wild plants in their native environments.



Inspired by the wash behind the yard, Betty has created a model of a young landscape populated with Sonoran Desert plants, cacti and succulents, and other low-water drought-adapted plantings. She especially enjoys combining climate-appropriate shrubs and wildflowers with cacti, succulents and rocks in harmonious ways. Berms provide visual interest and the flow of crushed rock unifies the space.

LOT SIZE: 1/3 acre purchased in 2016

SOIL: Tank's cactus mix with native soil

**WATERING:** In summer newly planted plant material is watered every other day for an hour with an irrigation system and a hand-held hose as needed. After establishment these drought tolerant plants will require less water.

**PESTS:** Soapy water; no insecticides as Betty grows butterfly plants.



**TIPS:** Betty builds her collection with plants which volunteer in her yard, plants received from others as gifts or from TCCS meetings and rescues, and plants destined for brush and bulky pickup which receive a second life in her yard. Do not be dismayed by the inevitable loss of some plants usually due to cultural conditions.

Learning about southwestern natives is challenging for Betty, but her progress is rewarding and soothing to soul.

**Noteworthy:** Exceptional view; Emily Mann solar light sculptures; Mangaves, hybrid of Agave and Manfreda; Arizona Wild Cotton bush; White Orchid Tree; Bursera.



## D. KEITH & HELGA

Keith and Helga became interested in cactus and succulents more than 30 years ago after many of their traditional plants, trees and shrubs died due to Texas root rot, a fungal disease found in some southwestern soils that is next to impossible to eliminate.

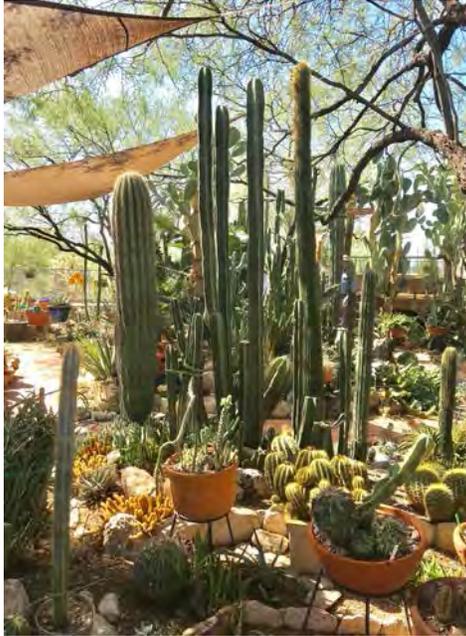
Paths around their property wander through robust natural desert which has been augmented by rescued plants, especially large barrel cacti, cholla, saguaros, and ocotillos. Varieties of terracing are demonstrated on the lot, designed to manage slopes, rainfall and erosion, and fabricated mostly with on-site materials.



The interior yard is enclosed by a block fence topped with expanded metal allowing a view of the surrounding desert while restraining some wildlife. The collection of Keith's spiny cacti and Helga's succulent and leafy plants grow in profusion, lightly sheltered by shade cloth and desert trees. A rock lined basin and stream catch rainwater overflow which reduces backyard flooding during rainfall. An enormous senita, *Pachycereus schottii*, grows from stems rescued with TCSS years ago. Many of these stems were damaged in 2011's 18 degree freeze, but no other damage has been noted down to 25 degrees.

Since the natural soil is mostly rocks, caliche and expansive clay, Helga and Keith have developed raised planters, terraced hills and containers with their preferred soil mix. Ceramic and clay creatures are scattered about the backyard in addition to several three-dimensional animals Keith has created by bending and welding steel sheets and wires.

One of two grow houses shelters more than 40 different species or subspecies of *Gymnocalycium* in the "Gymno house". The other one is used to root plants in pumice or care for ailing plants.



LOT SIZE: 1.3 acres on irregularly shaped lot. House built here 42 years ago.  
SOIL MIX: 50% Nature's Way Top Soil from Home Depot mixed with coarse sand sifted from a nearby wash. Coarse sand is anything passing through ¼" mesh but retained by normal screen door mesh, approximately 1/16" mesh.



WATERING: Harvest rainwater with three 55-gallon barrels by collecting roof runoff with gutters and downspouts. Rainfall of 0.10" fills all three barrels. Water every week in summer and for potted succulents every two weeks in winter if insufficient rainfall. Pool backwash is also used to water desert plants and trees.

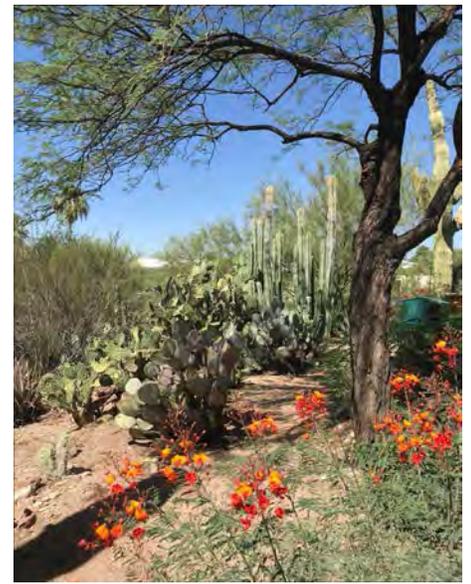
PESTS: Smash cactus beetles which are seen especially in the mornings after summer rains. Cut out and discard opuntia with black fungi spots. Organic spray for mealybugs.



## E. BARRY & CARYL

Barry's first memory of cacti was from Roy Rodgers and Gene Autry movies followed by visits to the cactus house at Missouri Botanical Gardens. Living in several areas of California provided access to Mohave Desert. Switching his focus to the Sonoran Desert came after 10 years as a volunteer at ASDM working with Mark Dimmitt.

Starting in 2000, Barry developed the north patio oasis with a water feature and turf. He also constructed an orchid and succulent greenhouse and began to develop pathways through the natural desert on the south. The natural desert areas have been enriched with rescue cacti. Desert trees provide filtered sun for some plants. Caryl Jones, a longtime Tucson resident and plant enthusiast, has recently influenced a neater and more orderly landscape, while retaining an authentic Sonoran feel.



The most recent development in their six-year energy savings plan has been the introduction of active rainwater harvesting which dramatically reduced their water usage and bill.. Three 55-gallon barrels are in the north patio, two 55-gallon barrels are with the greenhouse, and 1000-gallon cistern is attached to the irrigation system. They still water with reverse osmosis for the greenhouse and tap water for all else. Sprinklers are used as needed for some of the desert cactus and trees.



LOT SIZE: 1 acre

PESTS: Packrats continue to be a challenge.

SOIL MIX: For containers, 50-50 mix of Miracle Gro potting soil and pumice

TIPS: Consistent water and fertilizer

WATERING: Water as little as possible and use rainwater. Patio areas and oleanders are irrigated.



# FROM THE FLORILEGIUM

August of 2018 marked the 250th anniversary of the sailing of the HMS Bark Endeavour, the first ocean voyage dedicated solely to scientific discovery. The expedition, which departed England in 1768, returned 3 years later with some 3,000 plant specimens, including more than 1,000 new species, seeds for Kew Gardens, and 1,000 zoological specimens. Perhaps the Endeavour's most remarkable contribution to science is the Banks' Florilegium, the world's most famous—and expensive—florilegium, published 200 years after the ship's return to England.

In late August of 1768, Lieutenant James Cook (1728–1779) sailed from Plymouth to Tahiti with a naval crew of 84 plus a small group of scientists and artists to record the transit of Venus that would occur on June 3, 1769. Cook, a skilled astronomer as well as navigator, was joined in the observation by Joseph Banks (1743–1820), a wealthy naturalist, Charles Green (1734–1771), an astronomer, and Daniel Solander (1733–1782), a naturalist and student of Carl Linnaeus. Astronomers from several countries had also dispersed across the globe in a cooperative international effort to record the event.

A second objective of the voyage began after the ship left Tahiti. Cook's orders were to sail southwest in the Pacific in search of *Terra Australis Incognita*, “the unknown land of the south”. While Dutch sailors had already traveled to New Zealand, Australia was still unknown to Europeans, and Cook was to claim the land, if it existed, for Britain.

The *Endeavour* reached New Zealand in October 1769 and set about mapping its entire coastline and collecting specimens. The following April, the ship landed on the east coast of Australia. For 70 days, the scientists and artists found themselves overwhelmed with the bounty of unfamiliar plants and animals, and Cook appropriately named the location Botany Bay.

Of the three artists on board, only Sydney Parkinson (1745–1771) was a botanical artist, with the others specializing in landscape, ethnographic, and zoological drawing. When sketching the plant specimens, Banks and Solander would classify the plants and instruct Parkinson on how best to portray them and which structures to include. At first Parkinson was able to sketch and complete watercolors of each plant; soon, however, there were too many specimens for a single artist, and he only had time to make outline drawings of the plants with color notations. He managed to complete 674 outline drawings and 269 finished paintings, all accompanied by Banks' and Solander's notes.

Soon after leaving Botany Bay, the *Endeavour* ran aground in the Great Barrier Reef. It was 24 miles from shore and badly damaged. After two days of efforts to stop water from flooding the ship, the crew entered the mouth of what Cook named the River *Endeavour* and spent the next seven weeks making repairs to the ship. Again, the naturalists and artists had no trouble filling their days.

With the ship still in a damaged state, Cook sailed to Batavia in the Dutch East Indies (present day Jakarta, Indonesia) where the ship was taken out of the water for substantial repairs. Misfortune next struck the crew, as fever and dysentery afflicted all but ten of the men, seven of whom died. On the day after Christmas, the *Endeavour* set sail for the Indian Ocean despite the continued illness of nearly half of the crew. Over the next

few months, another 23 men would die from dysentery, among them all three of the artists on board, the astronomer Green, the ship's doctor, and its carpenter. Cook anchored the ship in Cape Town for a month to allow the sick to recover and to make more repairs to the ship, and on July 12, they reached Dover.

Upon returning to England, Joseph Banks hired five artists to complete Parkinson's unfinished drawings for a planned publication of the expedition's scientific discoveries. By 1784, 750 watercolors had been completed and copper plate engravings made. Yet, because of other demands on his time and Britain's economic downturn following the American Revolution, Banks was never able to publish the works.

In the late 19th century, the British Museum (Natural History) produced several sets of black and white prints from Banks' engravings. The image of New Zealand's speargrass reproduced here, courtesy of the Museum of New Zealand Te Papa Tongarewa, is one of those prints.

The process of producing the long-awaited 1989 publication of the magnificent Banks' Florilegium will be detailed in the November “Desert Breeze”. Additional information about celebrations of the 250th anniversary of the *Endeavour's* voyage can be found through the Florilegium Program's home page ([www.art-botanical.org](http://www.art-botanical.org)).



*Aciphylla squarrosa* Forster & G. Forster, 1895, United Kingdom, by Sydney Parkinson. Gift of the British Museum, 1895. Te Papa (1992-0035-2353/1601)

## TCSS BOARD

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

**Secretary:** Susan Durham  
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**Treasurer:** Cathy Robson  
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board@Tucsoncactus.org

(terms expire December 31 of year indicated)

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Bill Salisbury (2020)

Kris Thompson (2020)

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Bill Holcombe (2019)

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**Education:** Caryl Jones • education@Tucsoncactus.org

**Free Plants:** Donna Ellis • plants@Tucsoncactus.org

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**Programs:** Vonn Watkins • programs@Tucsoncactus.org

**Refreshments:** Patsy Frannea • refreshments@Tucsoncactus.org

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**Research:** Doug Rowsell • research@Tucsoncactus.org

**Garden Tours:** Bill Salisbury • tours@Tucsoncactus.org

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**Newsletter Editor:** Karen Keller • runbunny@cox.net

**Deadline for newsletter text or photos:  
Thursday, October 25, 2018**

### 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  
400 Rescues - 30,592 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## October 2018

### Thursday, October 4, 2018 at 7:00pm

The Tropical Deciduous Forest: Where cacti became succulent, and other biological explorations in Sonora  
Presented by Robert A. Villa

### Tuesday, October 9, 2018 at 7:00 pm

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

### Saturday, October 20, 2018 at 7:00 pm

TCSS Fall Home Tours.

## 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.

### In Memory Of Betsy Karsner

Donna & Robert Ellis

Pat Romskey

Kathryn Schroeder

Janice Hogue

### Pima Prickly Park

Janet Pipes (2Lg Saguaros)

Mavis Staflien

Gretchen Coughlin

Jeanne Sauer

### In Memory Ray Topp

Mary Rownd

Mary Key

Bernie Besl

### Unrestricted General Fund

David Yetman

### David Yetman '64 '66 '72

University of Arizona Alumnist of the Year  
College of Social and Behavioral Sciences  
"Academic expert on Sonora, Mexico and the Sonoran Desert. An Emmy Award Winning Media Presenter on the World's Deserts, Geography and Cultures of the Americas, and a Research Social Scientist in U of A's Southwest Center"  
David is also a long time member and supporter of the Tucson Cactus and Succulent Society  
We congratulate him on this achievement.



# DESERT BREEZE

Newsletter of the Tucson Cactus and Succulent Society

November 2018

Thursday, November 1, 2018 at 7:00pm

## NAMIBIA A dry place in a wet time 2011

Presented by Wendell S. (Woody) Minnich



Namibia, rivaled only by the Chilean Atacama, is one of the driest regions in the world. Much of its western coast, located in the southern reaches of the African continent, rarely, if ever gets rain. Some of these areas are only sustained by the seasonal nightly fogs. Due to these unique conditions, it is in some of these very arid, Mojave desert-like landscapes, where many of the world's most unique plants and animals can be found.

Similar to the infrequent rainy El Niño years that affect our California and Chilean coasts, Namibia had an extreme summer rain fall this last January thru April 2011. It is reported that this was one of the heaviest summer rains ever experienced in Namibia.

Our objectives were to visit this amazing country in this unusually wet time when the plants and scenery may be different than what most explorers might normally experience. We were in luck and our timing was perfect. When we arrived, the last of the torrential rains were spitting and sputtering off into the eastern reaches of the country. Windhoek, the capital of the country, was green and the weather looked promising. Needless to say, unlike some of our other friends who had visited the country the previous month, we were blessed with open roads and passable river crossings. The weather stayed sunny, warm and accommodating for the entire three weeks.

From Windhoek we took a giant clockwise loop to the south and then did the same from Windhoek to the North. We experienced the succulent rich areas to the Orange River, and from there we migrated up to the famous Luderitz Bay. The Richtersveld vegetation in these southern environments included many fantastic plants from the statuesque *Pachypodium namaquanum* to the many jewel like mesembs. One could spend a life time studying all these different genera, some of which included: the *Lithops*, *Sarcocaulons*, *Tylecodons*, *Conophytums*, *Othonnas*, *Aloes*, *Hoodias*, *Cerarias*, *Haworthias*, *Titanopsis*, *Adromischus*, *Pelargoniums*, *Crassulas*, *Avonias*, *Larryleachias*

and many, many more. On our northern loop we traveled to the west towards Swakopmund and then up to the impressive Epupa Falls on Namibia's northern border to Angola. From there we eventually meandered our way back to Windhoek. On this northern journey we encountered a very different group of succulent genera. The plant taxa generally became larger and often very sculptural. We saw: *Cyphostemmas*, *Pachypodiums*, *Welwitschias*, *Commiphoras*, *Sesamothamnus*, *Adansonias*, *Moringas*, *Aloes*, *Hoodias*, *Adenias*, *Adeniums* and so on and so on. We also stumbled across many wonderful animals, not in the game reserves, as well as some of the most beautiful indigenous peoples. The Herero and Himba tribes were both unexpected cultural highlights of this amazing trip!

I took over 10,000 photos, and a few have found their way into this presentation. Be prepared to see the trip of a life time and the total of Namibia, edited of course!

*Continued on page 2*

**Sunday, December 9, 2018  
TCSS Annual Holiday Party**

## November Meeting Refreshments

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

Continued from page 1

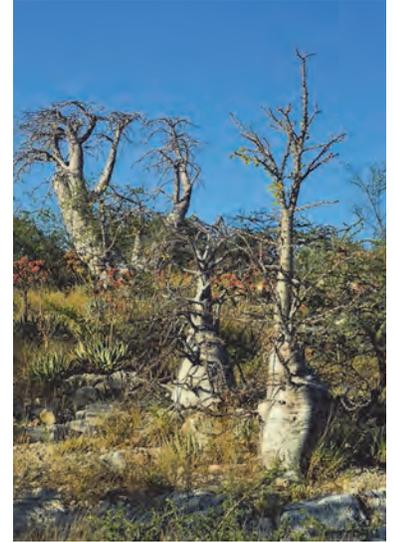
Woody, as he is commonly known, grew up in the Mojave Desert and has had an attraction to desert plants and animals since the early 1950's. He has been involved with the cactus and succulent world as a grower, field explorer, club and organization leader, writer, photographer, lecturer and presenter.

Having been a speaker all over the world, Woody is most often associated with giving presentations on his field work from the places he has traveled, such as: Argentina, Australia, Bolivia, Brazil, Chile, Madagascar, Mexico, Namibia, New Zealand, Peru, Socotra, South Africa, the United States and Yemen. He is also recognized for having operated the nursery Cactus Data Plants since 1975. Woody's show quality plants were often considered one of the standards for staging and horticultural achievement. His favorite genera include: Adenium, Ariocarpus, Astrophytum, Copiapoa, Cyphostemma, Fouquieria, Gymnocalycium, Lithops, Mammillaria, Melocactus, Pachypodium, Turbinicarpus and Pachycauls in general.

He has published numerous articles in various journals and his photography is featured in many books including; "The Copiapoa" by Schulz, "The Mammillaria Handbook" by Pilbeam, "The Cactus Lexicon" By Hunt and Charles, as well as many others. As of this last November 2017, he is featured as the primary photographer in the new book "The Xerophile." This book specializes in what the authors call, The Obsessed Field workers from around the world.

Woody and his wife, Kathy, live in Cedar Grove, New Mexico. He is a retired secondary school teacher of 32 years where he taught Graphics, Art and Architecture. In the cactus and succulent hobby, Woody is recognized for his high energy and creative spirit. As an educator, he has become an important part of the hobby and thus is an honorary life member of ten C&S societies. With 45 years in the hobby and 64 years in the field, he has many experiences to share and numerous photos to show.

Again we have quickly arrived at the last program presentation for 2018. Please come and enjoy this very special program and have an excellent evening with friends, fun, books, raffle plants, free plants and lots of great refreshments.



### President's Message

Saturday, October 20, 2018 was the fall home tour for TCSS. We have been doing this since 2009 and it is always a great success. I want to thank the homeowners who opened their gardens for this once a year tour. As one of them this year, I know how much work is entailed in getting gardens in shape and wanting to make the best impression on the members

and guests who attend the tour.

Just as important as the gardens is the Home Tour Committee which handles every detail to make the experience special. This committee does a great job in every aspect to make sure that the day is successful. Bill Salisbury has chaired the committee since its inception and this was his last tour as chairman. Thanks so much Bill. Committee members Patsy Frannea, Joie Giunta, Robert Ellis and Jean Lewis are fantastic. They are supported by a number of volunteers who spend 2 hour shifts welcoming visitors to the homes. The whole process works great and makes for a very special day for everyone. I hope you enjoyed the tour and are looking forward to next year.

At the November meeting we will be accepting nominations from the floor for officers and Board members in addition to those brought forth by the nominations committee. Nomination from the floor must have written consent from the nominee if they are not present. After the slate of candidates is approved at the meeting, a ballot will be created and mailed to every member of the Society as required by the By-laws. Your ballot needs to be returned by December 6, 2018.

In addition to the ballot, RSVPs for the Holiday Party on December 9 is included. We ask that you indicate the number in your party and the type of dish you will be bringing. This is always an enjoyable afternoon but there is limited space so RSVP as soon as possible.

The third piece in this mailing is your membership renewal. Membership runs from January 1 to December 31 with those new members joining after September 1 go to the following year December 31. You may renew for multiple years and the membership renewal application will indicate when your membership expires. There is also a life membership available.

As a 501(c)3 non-profit educational organization as approved by the IRS, donations are tax deductible. Under the new tax program approved by congress your donation might not have the same value as in the past. But, I know that you were donating to TCSS because you support what we do and the tax benefit was just an additional bonus. There are other financial benefits in special cases for donating to TCSS and you should check with your financial advisor for information.

I hope you have taken advantage of the monthly meeting speakers being recorded so that if you were not able to attend a meeting you could still hear and see their presentation.

Sometime in the late spring we will be celebrating the 20th anniversary of our rescue program. We hope to get close to 100,000 plants rescued by the end of 2019. We need your ideas and help in making this celebration an important activity for Tucson.

Thank you for another great year.

Dick Wiedhopf, President

# FROM THE FLORILEGIUM

[The voyage of the HMB *Endeavour* (1768–1771), the first ocean voyage dedicated solely to scientific discovery, was discussed in the October “Desert Breeze”.]

For eleven years after the HMB *Endeavour's* return to England from the South Pacific, five artists hired by Joseph Banks, the expedition's naturalist, completed 595 new botanical watercolors based on Sydney Parkinson's unfinished drawings made before his death aboard ship, in 1771. Working concurrently with the painters was a team of engravers who made copperplate engravings of each painting. By the end of 1784, the artists and engravers had produced a total of 738 works depicting the botanical treasures found by the *Endeavour's* naturalists in their travels around the globe.

But Banks' plan for a magnificent 14-volume color catalogue of the *Endeavour's* discoveries never materialized. He was elected President of the Royal Society in 1778, and began serving as advisor to King George III to expand and develop the Royal Botanic Gardens, Kew. As demands on his time increased, his plan to publish the paintings fell by the wayside.

The copperplate engravings, which were held by the British Museum after Banks' death, were finally used in the late 19th century to produce some blank-and-white prints for distribution to interested parties. Between 1900 and 1905, a 3-volume compilation of black-and-white prints was published as “Illustrations of Australian Plants”. But Banks' plan for a full-color publication of the *Endeavour's* botanical paintings wasn't realized until 1990, when the British Museum (Natural History) and Alecto Historical Editions completed production of “Banks' Florilegium”. Key to the project was authenticity--a decision to use only printing technology that would have been available to Banks.

In order to use Banks' original copperplates for this project, the surface of each of the 738 plates had to be polished and resurfaced, as acid in the paper they had been stored in for so many years had pitted the copper. The plates also had not been thoroughly cleaned after those early printing efforts, so dried ink filling all the delicately engraved lines had to be removed in order to produce clear, crisp prints.

Colors for the prints were matched to Banks' original watercolors using the Royal Horticultural Society's color charts. Once

selected, the colored inks were applied directly to the plates by dabbing with a *poupée*, a small twisted piece of cloth used to fill in all the engraved areas.

After inking the 18” x 12” plate, it was passed through the press, and the resulting print was dried between weighted sheets of blotting paper. The copperplate then had to be cleaned again before applying the ink for the next print. When the print was dry, it was checked for accuracy against the original watercolor and Banks' dried specimens. Lastly, the print was sent to a watercolorist for the addition of fine details.



*Banksia serrata*  
Painting by John Frederick Miller from a drawing by Sydney Parkinson (1770). Engraving by Gabriel Smith.

All of this meticulous and repetitive work took 10 years to complete. The final product wasn't a bound publication but rather a complete set of prints stored in archival cases. (These cases, a clamshell-type of box, are called Solander boxes, named after Daniel Solander, the naturalist who served as Banks' invaluable assistant on *Endeavour's* voyage and who supervised the watercolor painting of Parkinson's sketches until his sudden death, in 1782.)

The completed project consisted of 81,180 prints that filled 3,740 Solander boxes. Each complete set of the “Banks' Florilegium” consisted of 35 boxes containing 743 prints made from Banks' original copperplates. Only 100 complete sets were made available for purchase.

A complete copy of *Banks' Florilegium* sold at Sotheby's in 2015 for \$20,000 and at Christy's in 2000 for £36,700. For those of us with considerably fewer resources, a selection of 147 of the prints were published in 2017 by Thames and Hudson as “Joseph Banks' Florilegium, Botanical Treasures from Cook's First Voyage”. The prints in the book are 3/4 scale, and the book readily can be found for under \$100.

The process of printing from the copperplate engravings is far more fascinating than what can be described here. There are some wonderful web resources that show the general process of copperplate engraving and of printing from the engraved plates. Links to these videos are available on our website through our home page ([www.art-botanical.org](http://www.art-botanical.org)). But by far, the most interesting site to visit is Alecto Historical Editions where you can see all aspects of the printing process AND see all of the actual finished prints! Some of the individual prints can be purchased directly from their site, [www.alecto-historical-editions.com](http://www.alecto-historical-editions.com). The site has a wonderful zoom capability for viewing the intricate details of the engravings. Here is the link for viewing the prints: [www.alecto-historical-editions.com/apps/omega-search/](http://www.alecto-historical-editions.com/apps/omega-search/)

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

**When:** Sunday, December 09, 2018  
**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.**

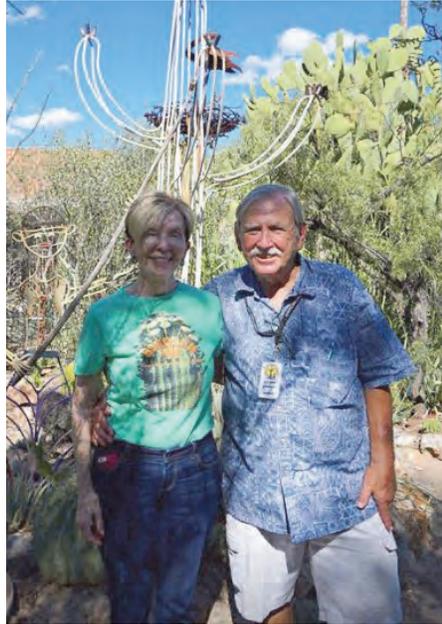
**IMPORTANT**

**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 2018. Please return Holiday Party RSVP and Ballot by December 6. (seating is limited)**

**Questions?- email [info@tucsoncactus.org](mailto:info@tucsoncactus.org) or call 520-256-2447**

**Thanks to our wonderful hosts who shared their wonderful desert gardens with over 200 of our members.**

*Photos by John Durham*



**FALL PLANT SALE**  
**Sunday, November 4, 2018**  
**9:00am to 11:00am**  
**4342 N 4th ave**  
 Just south of Wetmore Rd

**For more information**  
**call 520-256-2447**

**Gates open at 8:00am**  
**Vendor Sales start at 8:30am**  
**Rescued Cactus Sales**  
**start at 9:00am.**

Entry numbers will be handed out initially limiting access to rescued sales area. No limit on Barrels, 1 Saguaro, 1 box Mammillaria grahamii or thornberi and limited quantities of other rescued native plants for the first hour. Special Selection of native and non-native plants will also be available. These include: Adenium hybrids, Hesperaloe lg species, pedilanthus sp. and Stapeliad sp.

Fill a bag and  
*make a difference!*



Collected By:



**We are collecting:**

- Clothing
- Jewelry
- Accessories
- Handbags
- Shoes
- Linens

**SKY ISLANDS HIGH SCHOOL**

**Help us raise funds by cleaning out your closet!**

Please place your items in our Green Bin

On campus "Everything Stays Local!"



**TCSS BOARD  
Officers**

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)  
**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

**Secretary:** Susan Durham  
[secretary@Tucsoncactus.org](mailto:secretary@Tucsoncactus.org)

**Treasurer:** Cathy Robson  
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**Board of Directors:**  
[board@Tucsoncactus.org](mailto:board@Tucsoncactus.org)  
(terms expire December 31 of year indicated)

Steve Chesser (2020)  
Donna Ellis (2020)  
Bill Salisbury (2020)  
Kris Thompson (2020)  
Teresa Curtis (2019)  
Peter Ertman (2019)  
Don Morehart (2019)  
Thomas Staudt (2019)  
Keimpe Bronkhorst (2018)  
John Durham (2018)  
Linda Heisley (2018)  
Dale Johnson (2018)

**CSSA Affiliate Rep:**  
Bill Holcombe (2019)

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[cactus@Tucsoncactus.org](mailto:cactus@Tucsoncactus.org)

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**Programs:** Vonn Watkins • [programs@Tucsoncactus.org](mailto:programs@Tucsoncactus.org)  
**Refreshments:** Patsy Frannea • [refreshments@Tucsoncactus.org](mailto:refreshments@Tucsoncactus.org)  
**Technology:** [technology@Tucsoncactus.org](mailto:technology@Tucsoncactus.org)  
**Research:** Doug Rowsell • [research@Tucsoncactus.org](mailto:research@Tucsoncactus.org)  
**Garden Tours:** Bill Salisbury • [tours@Tucsoncactus.org](mailto:tours@Tucsoncactus.org)  
**Field Trips/tours:** Rob Romero/Joie Guinta  
[trips@Tucsoncactus.org](mailto:trips@Tucsoncactus.org)

**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:  
Friday, November 16, 2018**

**TCSS Web Page:**

[www.tucsoncactus.org](http://www.tucsoncactus.org)

**Webmaster:** Keimpe Bronkhorst • [webmaster@Tucsoncactus.org](mailto: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 0 2 5 5  
4

**Cacti Rescued - Since 1999**  
**410 Rescues - 31,555 Volunteer Hours**

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

**TCSS Club Members receive a 10% discount**

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

## November 2018

**Thursday, November 1, 2018 at 7:00pm**

NAMIBIA A dry place in a wet time 2011  
Presented by Wendell S. (Woody) Minnich

**Tuesday, November 13, 2018 at 7:00 pm**

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



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

## 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

Larry & Rowena Matthews  
**Pima Prickly Park**  
Carianne Campbell  
(9 Lg Golden Barrels)

### In Memory of Ray Topp

James Nelson  
Geneva Stazzone  
Jon Erickson

## Found During Home Tour

Black Cotton Hat  
Will be available at the meeting.



# Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society

December 2018

Sunday, December 9, 2018 • 3-5PM

## Tucson Cactus and Succulent Society Holiday Party & Gift Exchange

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

Set-up starts at 1pm • Bring food at 2:30pm

Dinner and Program-3pm till 5pm

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

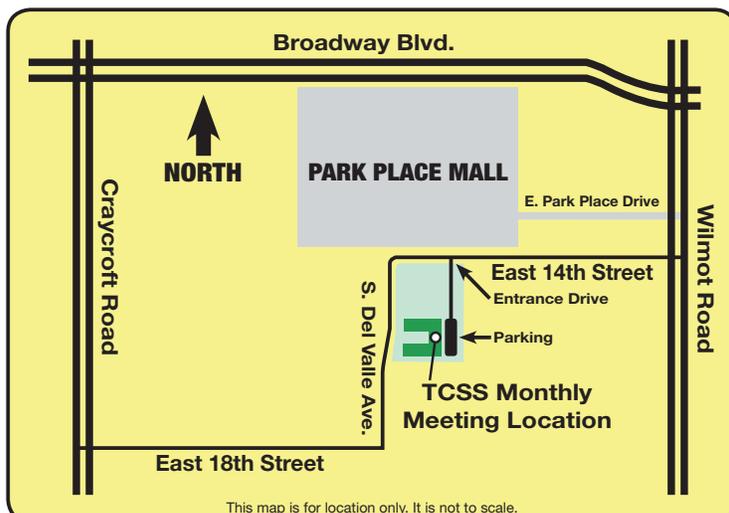
You will provide your favorite recipe  
(enough for 10+ servings) Hot or Cold

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

This has been another great year;  
let's make it special for others.  
Please bring donations (\$ preferred)  
for the Tucson Community Food Bank

### Gift Exchange:

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



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

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

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**TCSS Program Presentation**  
**Thursday, January 3, 2019 at 7:00pm**  
The Other Big Bend, Travels in Big Bend Ranch State Park  
Presented by Rob Romero

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## President's Message

A few final thoughts to end the year.

The final membership numbers for 2018 are 1,350 members representing 881 households. Besides being the largest local Cacti and Succulent Society, it has made it possible to support a wide range of activities. I just want to highlight a couple of them.

None of these would be possible if there wasn't dedicated volunteers and excellent leadership.

Never forget that our first goal is education. We are a 501(c)3 non-profit educational organization. Our educational activities stretch the full range from young children to seniors and everyone in between. There is an overlap of leadership and volunteers so that at every age and every activity the best and brightest are engaged in these educational activities. We are at Science nights, SARSEF, Classrooms and other events with our build a cactus kits or other related activities to help children learn about cacti and succulents and the environment they live in. Monthly program presentations by talented speakers which we record and make available to all our members. Our speakers are local, regional, national and international who provide a wonderful variety of programs. The Sonoran Biennial Conference, this year, number XII, provided lectures, workshops, vendor sales and other activities to increase our knowledge about our favorite subjects. We have also produced a book, "The Field Guide to Cacti and other Succulents of Arizona" now in the 2nd edition with the most complete and updated information available. We have sold more than 4,000 copies. These activities take leadership and volunteers and we have both.

Conservation is a topic that was always talked about but how to do it was just another discussion about who should be responsible. Almost 20 years ago we stopped talking about it and started doing something. That's our rescue program.

It is practical conservation where it is a win/win for everyone involved. You can see the results today. Almost all developers set aside a nursery onsite to save plants that will be replanted when the development is complete. Many of these contact the society to rescue the smaller plants and unusual plants like

"queen of night" and there is the perfect fit for conservation. We rescue from all types of activities that disturb native vegetation. Almost 95,000 cacti and succulents have been saved and returned to the Sonoran Desert environment. It sounds simple but takes leadership and volunteers to meet all the regulations that go along with this process. There are more than 300 members who have signed up to volunteer. This spring/summer we will be celebrating the 20th year and hopefully 100,000 plants rescued. We don't talk about conservation, WE DO IT.

"There's enough to do without one thing leading to another." That's a quote I got from Bernice Porter who founded the Tucson Botanical Gardens. Well, we are in the 8th year of a 15 year agreement with Pima County for the development of a park featuring cacti and succulents. We named it PIMA PRICKLY PARK. In August of 2011 we started to work on this 9.4 acres of fill material and a large mound with a bunch of Saguaros in a circle called Saguaro henge. You could stand on one end of this site and have an unbroken view of the other end. You can't do that now. The County asked if they could use 2 acres for their native plant nursery and we were happy to comply. What a great demonstration of education and conservation this park has turned out to be. We have a number of structures on the site for the general public plus work areas for our volunteers. The plants are growing and multiplying. We have created a number of gardens that will be spectacular as they mature. Let me name a few, the Hummingbird Garden where you can sit under a ramada and watch the hummingbirds do their thing. A Cholla Maise that you can walk thru easily and be up close to these plants when they bloom. We are constructing a large Ferocactus Garden that will have a blooming Ferocactus all year long. An Agave Garden, and an Ocotillo Forest, just too much fun. With great leadership and volunteers it has come together.

We are fortunate to have members who take leadership roles and volunteers who love to support these activities.

I am enthusiastic, humbled and honored to serve for these many years as president.

Thank you for another great year.

Dick Wiedhopf, President

## HELP

### NEWSLETTER BACK ISSUES

We are still missing back issues of our newsletter on the website. Please check your records, scrapbooks, former members, etc. to see if we can locate these records of our past. Listed below are the months and year that are needed. If you locate any of these, please bring them to a monthly meeting or send them to us at:

TCSS Newsletter's, PO Box 64759, Tucson, AZ 85728-4759

- 2001 All except Jun, Oct, Nov, Dec
- 1999-2000 All
- 1998 May, Jul, Nov
- 1997 Jan, Feb, Mar, Apr, Jul, Nov

- 1996 Jan Feb, May, Sept
- 1995 Jun, Jul, Aug
- 1994 Aug
- 1993 Sept
- 1992 All except Jul, Aug
- 1991 All
- 1990 All
- 1989 All except Jan, Feb
- 1988 May, Sept
- 1983-1987 All
- 1982 3rd & 4th quarter

## FROM THE FLORILEGIUM

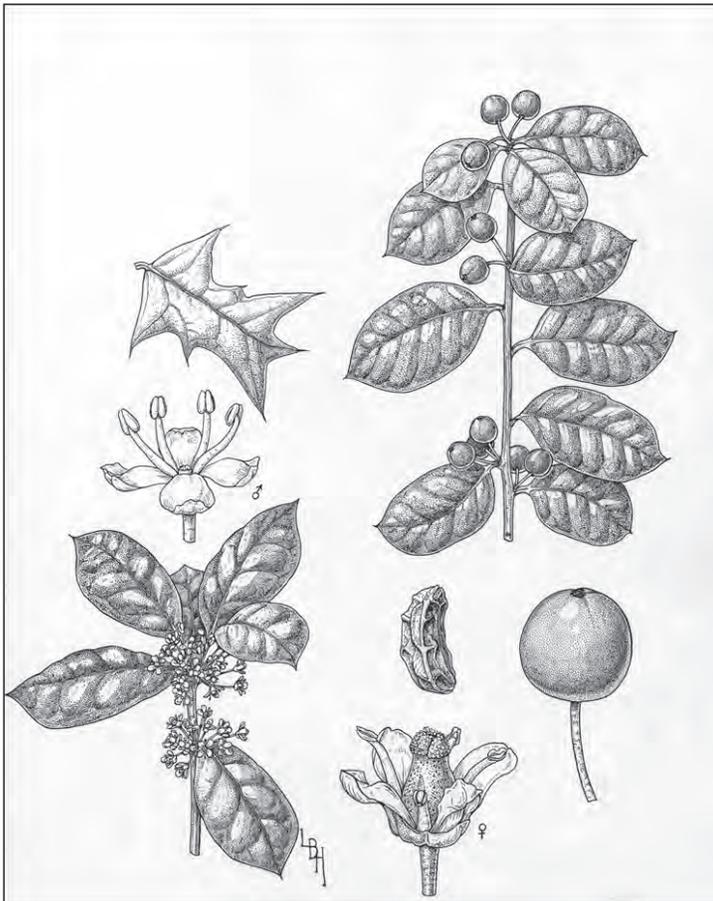
With its glossy green leaves and bright red berries, holly is the plant most often associated with traditional Christmas celebrations, and like many holiday plants, it had a prominent role in the pagan traditions of the winter months, from the Festival of Saturnalia, when sprigs of holly were exchanged between celebrants, to fertility rites using holly and ivy leaves. To rehabilitate the holly tree from its pagan past, new associations with the Crucifixion eventually took hold, with the red berries representing Christ's blood and the sharply pointed leaves alluding to his crown of thorns. The plant even became known as 'Christ's thorn'. The specific holly used in these celebrations was English holly, *Ilex aquifolium*, a native of Europe, northern Africa, and Asia.

Chinese holly, *Ilex cornuta*, native to East Asia, has a very similar appearance to English holly, with leathery, barbed leaves and red berries. It was first described in "Paxton's Flower Garden", in 1853, by Professor John Lindley and Sir Joseph Paxton from plants collected in China by the Scottish plant hunter Robert Fortune. In the United States, Chinese holly has been cultivated extensively from plants collected by Frank Meyer (of the Meyer lemon), a plant hunter for the U.S. Department of Agriculture who, in the early years of the 20th century, brought back plants from China for cultivation at the agency's experimental station in California. Unlike English holly, *Ilex cornuta* is tolerant of heat, drought, and alkaline soils and became the parent of many horticultural cultivars selected for height, quantity of fruit, leaf form, and color.

One of the cultivars that can be successfully be grown in our desert region is *Ilex cornuta* 'Burfordii'. Some of Frank Meyer's Chinese holly seedlings found their way to Georgia where Thomas Burford, superintendent of West View Cemetery in Atlanta, found an unusual specimen that had rounded leaves with only a single spine at the leaf tip instead of its parent's multiple spines. More importantly, where other holly species are dioecious, requiring male and female plants in order to produce fruit, Burford's discovery was self-fertile, producing female flowers only and clusters of large red berries.

*Ilex cornuta* 'Burfordii' is shown here in the pen and ink illustration by Lucretia Hamilton. On the left side of the plate is a single leaf of the parent, *Ilex cornuta*, showing the leaf's multiple spines. Beneath the single leaf is the male flower of Chinese holly. The remainder of the drawing is of the cultivar 'Burfordii', showing both fruiting and flowering branches, a single berry (or drupe), a seed, and the self-fertile female flower. Contrast the rounded leaves of Burford's cultivar with those of the parent plant, *Ilex cornuta*, shown in the second illustration, a chromolithograph that appeared in the Belgian botanical magazine "L' Illustration horticole", in 1854.

Illustrations of *Ilex* species native to the U.S. painted by Mary Vaux Walcott can be seen on the Florilegium Program's website along with illustrations of *Ilex cornuta* from "Curtis's Botanical Magazine" and "Paxton's Flower Garden". Links to these works are on our home page ([www.art-botanical.org](http://www.art-botanical.org)).



*Banksia serrata*, Painting by John Frederick Miller from a drawing by Sydney Parkinson (1770). Engraving by Gabriel Smith.



*Ilex cornuta*, "L' Illustration horticole" vol. 1 (1854), Image courtesy of Biodiversity Heritage Library, ([www.biodiversitylibrary.org](http://www.biodiversitylibrary.org))

## What is the Mini-Rescue Crew?

TCSS is trying a tactic to allow the club to respond better to sporadic opportunities that come up suddenly for Monday thru Friday and have immediate deadlines: namely, the 'mini-rescue crew.'

Traditionally the rescue crew works almost exclusively on weekends when construction crews are not on the property, and we have time to give everybody at least 2-3 days notice. This meant that when an opportunity came up where we needed to dig 'tomorrow,' we quickly called the same group of people.

With the 'mini-rescue crew' we now have an expanded list of volunteers who can show up midweek with minimal notice.

In the past month, we have run five mini-rescues under one or more of the following circumstances: (1) The property owner allowed the dig only during the workweek when his employees could be onsite (2) We had a very small acreage. (3) The area contained an extremely limited number of plants. (4) The

landowner requested no more than 10 people on the property. (5) The rescue area had complicated 'No Dig' boundaries that were not clearly marked.

Mini-rescues are not less strenuous, shorter in duration, or less hazardous than the traditional large, open projects scheduled on weekends. As with any rescue, we must have a subset of experienced diggers, and we save spots for newcomers. We currently have 60 volunteers on the mini-rescue list, and we will cycle through the list to give everybody an opportunity.

We will still be running large, traditional rescues on the weekends as we did before—that hasn't changed. We are currently planning such a rescue sometime after Thanksgiving.

If you want to be added to either the regular or mini rescue crew (or both), please email Donna Ellis ([cactus@tucsoncactus.org](mailto:cactus@tucsoncactus.org)) and include a phone number for the mini rescue.

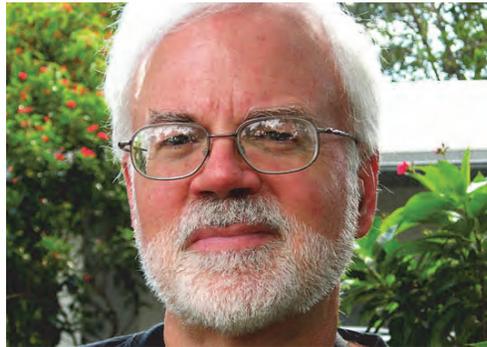
Donna Ellis

TCSS Cactus Rescue Coordinator

## A Flashback of Monthly Speakers we had the pleasure of hosting in 2018



Chuck Hanson



Ted Fleming



Sula Vanderplank



Gary D. Roberson



Bill Thornton



Michiel Pillet



Mark Dimmitt



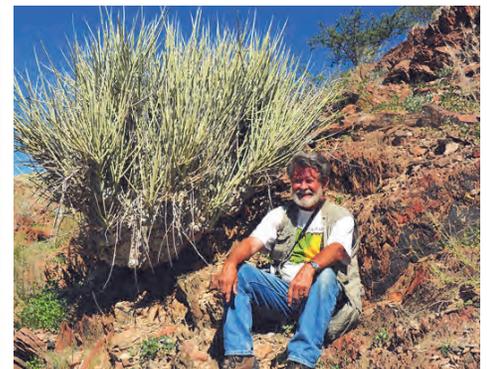
Greg Starr



Tristan Davis



Robert A. Villa



Wendell S. (Woody) Minnich

## TCSS BOARD

### Officers

**President:** Richard Wiedhopf • [president@Tucsoncactus.org](mailto:president@Tucsoncactus.org)

**Vice President:** Vonn Watkins • [vp@Tucsoncactus.org](mailto:vp@Tucsoncactus.org)

**Secretary:** Susan Durham  
[secretary@Tucsoncactus.org](mailto:secretary@Tucsoncactus.org)

**Treasurer:** Cathy Robson  
[treasurer@Tucsoncactus.org](mailto:treasurer@Tucsoncactus.org)

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**Free Plants:** Donna Ellis • [plants@Tucsoncactus.org](mailto:plants@Tucsoncactus.org)

**Floilegium:** Margaret Pope • [art@Tucsoncactus.org](mailto:art@Tucsoncactus.org)

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**Newsletter Editor:** Karen Keller • [runbunny@cox.net](mailto:runbunny@cox.net)

**Deadline for newsletter text or photos:**  
**Thrsday, December 20, 2018**

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## December 2018

**Sunday, December 9, 2018 at 7:00pm**

TCSS Annual Holiday Party

**Tuesday, December 11, 2018 at 7:00 pm**

Board meeting, Ward 3 Council office at

1510 E Grant Rd. Tucson, AZ

## Teresa Curtis

Teresa has recently moved from Arizona. Her seat on the Board of Directors is now vacant. She was a great volunteer for almost every activity. Teresa and Kris Thompson took responsibility for all the sale of TCSS logo Shirts, caps, lanyards, etc. that we sell. She says, "thank you for all the friendship and support." We will miss her.

## Holiday Party Reservations

If you have not sent in your reservation for the Holiday Party please call our info line at 256-2447 to verify that there is available seating. We are limited to 162 places.

## Succulents at the Huntington Gardens 2018

