Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society January 2013

Thursday, January, 3, 2013 at 7:00 PM

"The Road to Singapore"

Presented by Val Little with Mark Dimmitt and Gene Joseph

Aerial view of the Cloud Forest and Flower Dome, Gardens by the Bay, Singapore

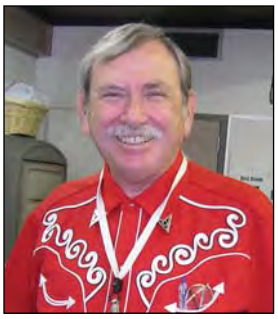
Baobab and Bottle Tree Garden, Flower Dome, Gardens by the Bay, Singapore

Supertree Grove, Gardens by the Bay, Singapore

Trained as both a Landscape Architect and an Anthropologist, Val Little is best known as the Director of the Water Conservation Alliance of Southern Arizona. A long time traveller and plant geek, Val attended the opening of the new, Gardens by the Bay, botanic garden in Singapore last summer. This One Billion Dollar garden is the new home to many plants grown right here in Tucson by our local plant legends (Mark Dimmitt, Jane Evans, Gene Joseph, Dan Bach, etc.) These specimen plants have been integrated with the over 700,000 plants that make up this tough-to-describe, twenty-first century garden. Come share the travel experience of these plants as they are prepared to travel, and see the opulence of where they now live and are seen daily by thousands.

Be sure to place this program on your calendar as a "must attend" for the new year! This will be a special program that everyone should truly enjoy. Come and experience the program, find conversation with the multitude of cactus and succulent fans, ask some questions, have some great refreshments and truly enjoy an excellent start to 2013.

TCSS Program Presentation
Thursday, February 7, 2013
"Rarely Seen and Rarely Found Native Cacti of Arizona"
Presented by Peter Breslin



President's Message

Your membership renewals are being processed, donation receipts for 2012 are sent and "Cactus Bucks" for the rescue crew members will be sent soon.

I want to especially recognize and thank David Moyer our retiring secretary. He has been the glue that holds things together and keeps us focused on our commitments. He is an important volunteer at every event and especially at rescues. I am very privileged to have worked with him over the last 4 years. Thanks David.

There is a calendar on our website which has tentative dates for all our activities in 2013 and more activities are added throughout the year. We are working on a "What's Happening" for the next few months in every newsletter. Be sure to check it out starting regularly next month.

We need a volunteer to arrange for free plants, door prizes and raffle items for each meeting. There are no costs to you, just a little time to make all the arrangements. Please let me know if you are interested in helping with this activity.

A new list of contact emails is in this newsletter. We have made it easy by identifying the contact by title rather than name and the computer (with the help of Joe Frannea) does the rest. Every email address is @Tucsoncactus.org. So if you want to contact me it will be president@Tucsoncactus.org. We can always be reached by phone at 520-256-2447.

A list of committees will be sent out (hopefully with the renewals) and you can easily contact the chair or the committee by email or phone if you're interested in helping. With your help this will be another great year for TCSS.

I hope everyone had a wonderful holiday.

Thank you for your support,

Dick Wiedhopf, President

Presidents Awards

For the last several years, the Board of Directors has authorized the President to present awards to members for their service to the society. These awards are announced at the annual meeting in conjunction with the Holiday Party. There are two types of awards. The President's Award recognizes Outstanding Service to the society and the President's Special Service Award recognizes individuals for their Continued Special Dedication and Outstanding Service Contributions for the success of our society. The awardees are recommended to the President by the Board and committee chairs and the decisions are made by the president. Each recipient receives a special engraved trophy. A list of all awardees can be found on our website.

This year the recipients of the President's are Bill Hicks and www Rim & Marija Tallat-Kelpsa

Bill is an active member of the Board of Directors and has been elected to and chaired the nominations committee which is always challenging. He is a long time supporter and active participant in the rescue program and you see him at almost every meeting introducing guests and giving away door prizes and raffle plants. He certainly makes it fun.

Rim & Marija have been a part of the rescue program from it's early days. They are an essential part of our Home tours activities rounding up volunteer and planning the details that makes this so enjoyable. Marija contributes her talents on the refreshment committee. They are a part of every activity helping out wherever they can.

The President's Special Service Awards were given to Bill Thornton and Jim Elliot. It is special to have Bill involved in this society. He participates in everything and does it with tremendous enthusiasm. His activities go beyond our society and provide us with special opportunities for community outreach. Bill is an active participant in our rescue program, constant donor of special plants and financial support of our programs and very knowledgeable about this community.

For almost four decades Jim Elliot has been growing and selling cactus and succulents in the Phoenix/Chandler area. Since 1977 he and his lovely wife Electra have owned Arizona Cactus Sales in Chandler. Jim has been a long time member of the TCSS and a special friend to us. He has opened his nursery to us on bus trips to Phoenix, has been a monthly meeting speaker and a donor of plants for meetings, conferences and conventions. He is truly an important part of our hobby.

Congratulations and thank you to all our awardees.

New additions to the library

The Gardener's Guide to Cactus: The 100 Best Paddles, Barrels, Columns, and Globes by Scott Calhoun
This book is a great beginners guide and useful for the more experienced as well. It contains numerous photos of various plants, many showing what the flowers will look like, what size the plant will ultimately reach and more.

Intermountain Flora Vascular Plants of the Intermountain West, U.S.A. Volume Two, Part A Subclasses Magnoliidae-Caryophyllidae
By Noel H. Holmgren, Patricia K. Holmgren and James L. Reveal and Collaborators

Look for the excellent review by Gene Murphy in the November Desert Breeze.

Field Trip

We have a field trip coming up, scheduled for April 7, 2013. It will be down south along the Ruby Road. There are many cacti and other nice plants in that region and we will likely see things like coryphantha recurvata, mammillaria macdougalii, agave parviflora, among others. It will be open to approximately 22 total people using 2 vans. More information coming about cost, time, etc., as we work out the details.

My Prickly Friends

Cylindropuntia kleiniae var. tetracantha

Family: Cactaceae
Genus: Cylindropuntia
Species: kleiniae var. tetracantha (Toumey) W.T. Marshall
Common Name: Klein's Cholla, Klein Pencil Cholla, Thin Cane Cholla

Habitat: This cholla is usually found near wash areas and desert flats and also occurs in the low hills. Elevations for this species is from 2,000 to as much as 3,500 feet.

Range: The distribution can be somewhat wide spread although it is not an overly common species wherever it is found. In Arizona the population seems to be concentrated in and around Tucson, but it is also seen in Yavapai, Navajo, Gila, Pinal, Pima and Cochise County. Southward it extends through Sonora and into Sinaloa, Mexico.

Care: This is a very easy plant to care for. It requires very little care but may need a little extra water during the early summer months to maintain a healthy appearance. In Arizona it is sometimes attacked by the longhorn cactus beetle (Moneilema gigas) or (Moneilema armata) as are many of the chollas. This is a hardy plant that can take some very cold temperatures even below 0° F., and also survive the extremes of Arizona heat and sunlight.

Propagation: The easily removable stems can root rather quickly and new plants can be well established in a short amount of time. Plants may also be grown from seed.

Size: Rather large mature plants can be found growing to over 7 feet tall and up to 8 feet wide. In cultivation, very nice size plants should be expected and it may be a good idea to allow adequate space before planting.

Shape: Cylindrical Stem/Jointed

Flowers: Most plants have flowers that are somewhat of a light pink color with darker outer petals. Sometimes lighter or darker flower color variations may also be found. The flower size is approximately 1 to 1.5 inches in width. The fruit color can be light orange to bright red and may remain undisturbed on the plant until the following year.

Description: The joints of this cholla are usually about 2 to more than 10 inches in length. They are somewhat dark green in color and equipped with formidable barbed spines .25 to 1 inch in length.

Comments: This has become a rather popular cholla in recent years and more and more people seem attracted by the plant's shape and flower color. This cholla can be a bit of a hazard for both pets and unaware children or others who venture too close. The sharply barbed spines can attach with ease and the stems easily separate from the main stem so caution should always be observed. It has been a favorite of mine for many years and can be easily cultivated throughout the south and even into colder parts of the United States. *Cylindropuntia kleiniae var. tetracantha* can be an admired member of your landscape, and as one of my cholla friends, I would definitely recommend this cactus.

Growing in the Desert Series:

Adeniums for Winter Color

by Mark Dimmitt

Most people who grow adeniums in cool-winter climates let them go dormant for the winter (Figure 1). If they can't be kept at least in the 80s F during the day and above 50 at night, this is the safest way to prevent rot. They are often stored in a poorly lit location and given little or no water. Some will flower sparingly under these conditions. But if you have a hot, sunny location, many adeniums will flower profusely throughout the cold months (Figures 2, 3). They are a great way to provide color during a time of year when few succulents are in bloom.

If kept hot and bright all year, the majority of commonly sold adeniums begin flowering when summer heat breaks (about late September in Tucson), and flower well into winter or all the way into May (Figure 4). All adeniums produce most of their annual vegetative growth in summer, and bear fewer or no flowers during this season. (Plants forced into dormancy tend to shift their flowering season to summer.)

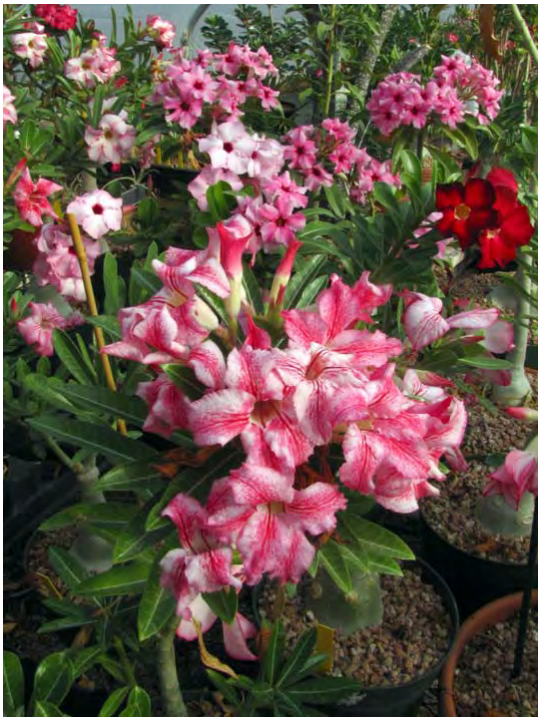
The simplest suitable location is a south-facing windowsill; an east or west exposure may also be adequate. If it's uncomfortably hot to hold your hand on the sunny windowsill, adeniums and other plants are likely to burn. Light shade such as from a window screen or a leafless tree outside the window may be necessary. Increasing air circulation with a small fan may be sufficient to avoid burning. Smaller cultivars such as 'Happy Princess' (Figure 5) or dwarf strains of *A. arabicum* (Figure 6) are well suited to windowsill storage.

For more plants, a simple lean-to greenhouse can be built on the south side of the house, consisting of a PVC or conduit frame covered with clear plastic. Build it over a window, and leave the window open at night to provide heat. Of course, nothing beats a greenhouse once you get hooked.

As already stated, the majority of adeniums in cultivation are potentially evergreen and winter-flowering if kept under tropical conditions and watered regularly. Those plants that are in leaf should be watered every couple of weeks, just enough to keep the caudex firm. The deciduous species should be given much less water, even if they are in full bloom. Larger plants with substantial caudexes may not need any for months at a time. This group includes all the pure species except Adenium obesum. (*Adenium arabicum* and *A. socotranum* may retain most of their leaves all winter, but they still need very little water when not growing.)

Some adeniums flower only during winter. These are rarely found for sale. Nurseries tend not to carry them because few customers buy adeniums in winter. *Adenium multiflorum* (Figure 7) sheds its leaves when the weather turns cold, and flowers profusely from January to March. The plant can grow quite large, but as with most succulents, size can be controlled by keeping it underpotted and fertilizing sparingly. One of this species' few hybrids, 'Winter Remedy' (*A. multiflorum* X *A. swazicum*, Figure 8), has the same habit, but some flowers continue into early summer.

Figure 1. Ignore the flowers; both of these Adenium arabicum are dormant. Neither is actively growing new leaves and stems, and they are therefore consuming little water. The leafless one in a 12-inch pot will need no water for at least three months. The leafy one in a 6-inch pot may need a light watering once a month to keep the caudex firm.



Figures 2 and 3. Dimmitt's adenium house in mid-December. Many of these plants will continue to bloom through spring.

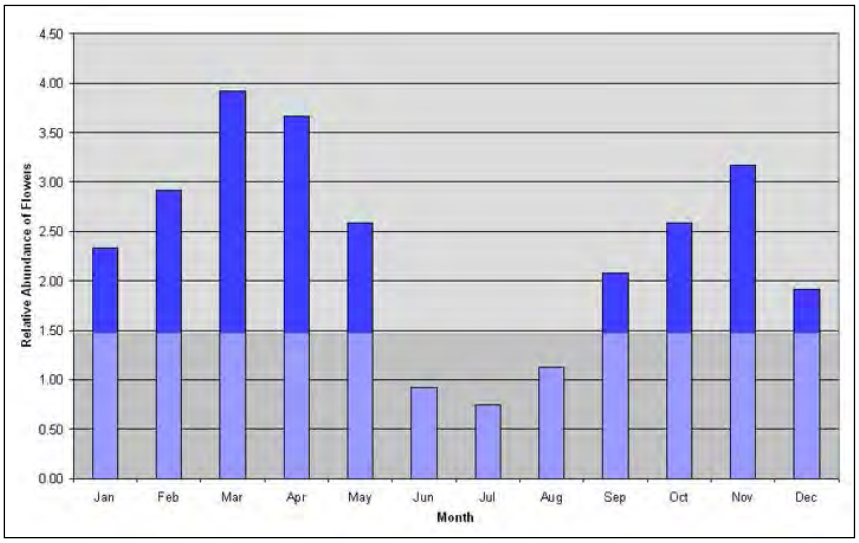


Figure 4. Flowering chart of a typical modern Adenium hybrid. If kept warm and watered all year, it will flower fall through spring. The dark blue bars indicate lots of flowers; light blue ones below flowering level one indicates only a few flowers.

Figure 5. Adenium 'Happy Princess' is an outstanding compact Taiwan hybrid of A. crispum that is almost always in flower. Photo taken in mid-December.

Figure 6. Some populations of Adenium arabicum, such as this Soodah Dwarf strain in a 4-inch pot, are evergreen and everblooming under tropical conditions. This year-old plant was photographed in mid-December in front of the caudex of a large specimen of a standard A. arabicum that is deciduous and flowers mostly in spring. Adenium arabicum is quite a variable species in growth and flowering habit.

Figure 7. Adenium multiflorum from South Africa and Mozambique sheds its leaves and flowers profusely in winter.

Figure 8. Adenium 'Winter Remedy', a hybrid between A. obesum and A. swazicum, is mostly deciduous and flowers heavily in winter. Some flowering continues until late spring.

Holiday Party 2012

Photos provided by John Durham

TCSS Election Results

233 Ballots were received and counted. This is approximately 23% of the society.
All candidates were running unopposed and have been elected.

President:	Dick Wiedhopf
Vice President	Vonn Watkins
Secretary	Susan Durham (Board appointed 12-11-2012)
Treasurer	Joe Frannea

Board of Directors
(term ending December 31, 2015)
Keimpe Bronkhorst
John Durham
Linda Heisley
Dale Johnson

Thank you on behalf of the nominations committee,
Bill Hick – Chair
Dale Johnson
Linda Bartlett
Cyndi Garrison

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 & Unrestricted Fund
Betsy Zukoski
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Bill Kendall
Gene Kelly
Marsha Turkin
Karl Newton
Gabriele Koschorke
Joe Diehl
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Nancy Reid
Mark A. Dimmitt
Carol J. Owens
Bill and Randy Owens
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Mathew B. Johnson
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Patricia A. Rorabaugh
Sue Hildreth

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Chuck Penson
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Chris Marshall
Patricia H. Waterfall
Joe Friend
Gilbert Durham
Joy Phoenix
Betsy Zukoski
Vonn Watkins
Robert Pittman
Wendall & Rosemary Niemenn
Ralf Holzheu
Cathy & Elias Cabezas
Marian Alaback
Linda Heisley
Martha & Steve Goode
Susan Thickett
Angela Miller
Dick & Brenda Loffi
Chuck Huckelberry & Family
Corinne Cooper
David & Suk Moyer
Russ Freeman
Chris Freeman
Brenda Loffi
Leslie Johnson

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

Secretary: Susan Durham
secretary@Tucsoncactus.org

Treasurer: Joe Frannea
treasurer@Tucsoncactus.org

Board of Directors:
board@Tucsoncactus.org
(Ending Dec. 31, 2013)
Linda Bartlett
Cyndi Garrison
William (Bill) Hicks
Thomas Staudt

(Ending Dec. 31, 2014)
Ed Bartlett
Rob Romero
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Bill Salisbury

(Ending Dec. 31, 2015)
Keimpe Bronkhorst
John Durham
Linda Heisley
Dale Johnson

CSSA Affiliate Rep:
Bill Holc*ombe (2013)*

Cactus Rescue
cactusrescue@tucsoncactus.org

Cactus Rescue: Chris Monrad/Joe Frannea

Education: Open
Free Plants: Open
Floilegium: Margaret Pope • art@Tucsoncactus.org
Librarian: Joie Giunta • librarian@Tucsoncactus.org
Prickly Park: Jesse byrd (Implimentation)
park@Tucsoncactus.org
Programs: Vonn Watkins • programs@Tucsoncactus.org
Refreshments: Patsy Frannea • refreshments@Tucsoncactus.org
Technology: Open
Research: Doug Rowsell • research@Tucsoncactus.org
Garden Tours: Bill Salisbury • tours@Tucsoncactus.org
Field Trips/tours Rob Romero/Joie Guinta
trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, February 21, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

January Refreshments
Those with family names beginning with N, O, P, Q, R, S, and T please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed! the meeting. Your generous sharing will be greatly appreciated and enjoyed!

60225 Cacti Rescued
293 Rescues Accomplished

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

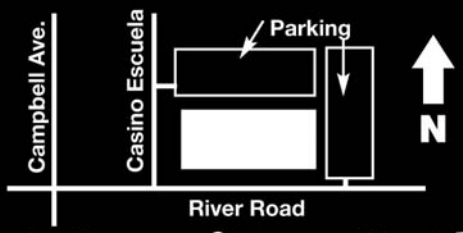
TCSS Club Members receive a 10% discount

January 2013

Thursday, January 3, 2013 7:00pm
Monthly Meeting, "The Road to Singapore"
presented by Val Little with Mark Dimmitt and Gene Joseph

Tuesday, January 8, 2013 7:00pm
Board meeting at the U of A College of Pharmacy

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society February 2013

Thursday, February 7, 2013 at 7:00 PM

"Rarely Seen and Rarely Found Native Cacti and Succulents of Arizona"

Presented by Peter Breslin

Do you know which three unusual Arizona cacti these are and where they are found? Come to the February meeting and either brag about it or find out more!

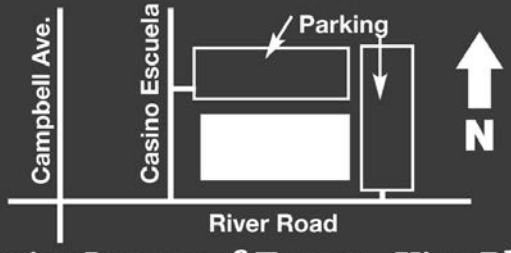
Most well known for larger, charismatic flora such as the Saguaro, the Arizona deserts are also home to some of the smallest, rarest and hardest to find cacti and other succulents in existence. For the past several years, Peter Breslin has been traveling into many of the obscure locales of Arizona from his home base of Tempe, searching out the least well known, marginal, rare and endemic cacti of the state. From Peniocereus striatus in Tohono O'odam country to the vast expanses of the House Rock Valley and Kaibab Plateau areas, from the Mojave County transition zones to the Mojave Desert to the far southeastern transitions to the Chihuahuan Desert, Peter has found and photographed many of these elusive, cryptic cacti and succulents, not often seen in habitat except by luck or after a long search. His presentation will feature dozens of photos and a lot of information on the plants and their habitats.

Peter teaches high school mathematics at New School for the Arts and Academics, a charter school in Tempe, AZ. He has logged more than 80,000 miles on his 1991 Honda Civic in the past 7 years or so, searching out and photographing rare, endemic cacti in Arizona, New Mexico, California, Texas, Sonora and the entire Baja Peninsula. He is also a performing drummer and pianist, and he grows a collection of mostly North American cacti which now takes up every available square foot of sunlit space in his very small Tempe yard.

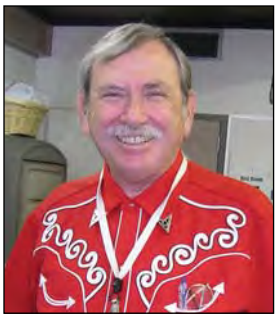
I hope that you will come to this special program presentation and find out what is truly out there in Arizona! Peter will present an excellent program that should truly be a challenge to those wanting to know more about the rare and unusual cactus and succulents of Arizona. We will enjoy Peter's excellent program, have some great food, win a few raffle plants and get a free plant at the closing bell!

TCSS Program Presentation
Thursday, March 7, 2013
"The Agaves of Baja California: New Finds, Old Farvorites"
Presented by Greg Starr and Bob Webb

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road



President's Message

Déjà vu all over again.

You'd think I would've learned something from the 2011 freeze and all the others that I have experienced over the last 50 years in Tucson. Well, you're wrong. I just replaced all those plants that froze in 2011 with other cacti and succulents that froze last month. So I am bidding good-bye and farewell to Aloes in the ground. Bye-Bye sensitive prickly-pear and all the pads that dehisced. Cereuses, let's be serious, most of you don't belong in Tucson gardens. So-long to my soft green or grey leaved Agaves from the warmer and more tropical places. I've learned my lesson.

Well if you believe that I have a bridge I'd like to sell you.

I am going to try to be more selective but it's hard to pass up those plants. Perhaps when I see my electric bill for all the plants that I did protect, I will do better. My goal this month is to replace those plants with hybrid Trichocereus, Echinocereus, Ferocactus and very hardy Agaves.

If you have some hardy favorite plants, please send a list of them to me for our website. Everyone will appreciate it.

There are some special events coming up in the next 3 months including a Green Valley Expo, Pima Prickly Park Expo, bus trip to the Desert Botanical Garden and a limited field trip to the Ruby area. Be sure to read details in these newsletters and your emails.

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Finally, I have found a reasonably priced high-low thermometer at woodwardcrossingscountrybasics.com, check it out.

Thank you for your support,

Dick Wiedhopf, President

Desert Botanical Gardens Bus Trip

For the last several years, the Board of Directors has authorized offering this trip. We are planning a trip to the Desert Botanical Garden on Sunday, April 7, 2013. This is the day for the Central Arizona Cactus and Succulent Society Show to be held. Following DBG, we will go to Arizona Cactus Sales in Chandler. We will leave Tucson at 7:30 AM and will return between 5:30 and 7:30 PM. The cost of the trip will be $40. This will include the bus, snacks, lunch and admission to the gardens. In order to finalize the trip, we will need a minimum of 40 paid participants by March 8, 2013.

Payments can be made to:
TCSS Bus Tour, PO Box 64759, Tucson, AZ 85728-4759
Or sign up at the library table at the next meeting.

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

There is a new fun thing to do at our monthly TCSS meetings! If your favorite cactus or succulent has lost its nametag or has always been a mystery plant, bring it to a meeting and place it on our "What is it?" table. Photos will work, too. We have many knowledgable members who will then try to identify your plant.

"From The Florilegium"

This wonderful watercolor by artist Sally Boyle was painted from an herbarium specimen collected in 2001 by Wendy Hodgson on the Grand Canyon National Park's Bright Angel Trail (Desert Botanical Garden Herbarium Voucher 13998).

Sally's hybrid yucca was exhibited in 2012 at the Tempe Public Library's juried exhibit Indigenous Botanicals of Arizona which was organized by the Southwest Society of Botanical Artists (the local chapter of the American Society of Botanical Artists).

Sally Boyle is a graduate of Arizona State University with a Masters in Art and has taught Art and Art History for days beyond counting. She has spent several years living and working in South America, where she and her husband create documentaries based on women's stories. She is passionate about botanical illustration, Art History and painting.

Sally loves how plants reveal themselves, slowly, yet systematically, ultimately exposing all of their secrets (OK, maybe they keep one or two hidden).

The entire exhibit Indigenous Botanicals of Arizona can be seen on the Florilegium Program's website under "Past Exhibits" **www.sonorandesertflorilegium.org.**

Yucca baccata x Yucca elata Watercolor © Sally Boyle 2011

Growing in the Desert Series:
Winter-Blooming Pachypodiums

by Mark Dimmitt

This series is devoted to featuring succulents and other xerophytes that are well adapted to the desert climate of southern Arizona. It also tends to favor unusual species that are not often found in collections. Even though we are blessed with usually mild winters and plenty of sunshine, there are rather few succulents that put on a good flower show in winter. Here are two pachypodiums that will brighten any greenhouse or sunny windowsill.

Pachypodium decaryi (Figure 1) is rare in cultivation, probably because it is very slow growing. The specimen in the photo is in a 14-inch pot and stands about three feet tall at 31 years old. With age it develops a modest caudex, topped with a few somewhat spiny stems. In summer the stems are tipped with large Plumeria-like leaves. Foliage is shed in fall, then in winter the bare stems produce large pure white flowers for about two months (Figure 2). The photo was taken in late January, about halfway through the flowering season.

This species likes ample water in summer, and should be kept dry in winter. It is a bit sensitive to extreme summer heat; I keep my plants under a mesquite tree from April through October. Protect it from frost in winter. It can tolerate low 20s under a roof and covered with a blanket.

Pachypodium brevicaule is a stunning dwarf, essentially stemless species that looks much like a monstrose potato. Many people find it difficult to grow; I have never been able to keep one alive for more than a couple of years. Pachypodium densiflorum is a spiny shrub that reaches about two feet tall and wide. Both species are prone to rot in high summer heat. Hybrids between the two are much easier to grow. The plant in Figure 3 is a five-year-old P. *brevicaule* X (P. *brevicaule* X P. *densiflorum*), making it ¾ P. *brevicaule*. It looks like a super-compact P. *densiflorum*. Like P. decaryi, it is winter-deciduous and -flowering. The brilliant yellow flowers are borne on nearly every stem in January and February (Figure 4).

Culture of this hybrid is about the same as for P. decaryi, except that I water more sparingly in summer. It has a small root system that doesn't draw much water.

Figure 1. A 31-year-old Pachypodium decaryi in full flower in late January. The vine with clasping leaves is Hoya imbricata.

Figure 2. The brilliant white flowers of P. decaryi are nearly three inches wide.

Figure 3. A five-year-old plant of P. brevicaule X (P. brevicaule X P. densiflorum).

Figure 4. The brilliant yellow flowers of the Pachypodium hybrid in Figure 3.

My Prickly Friends

Cylindropuntia spinosior

Family: Cactaceae
Genus: Cylindropuntia
Species: spinosior (Engelmann) F. M. Knuth 1935
Common Name: Cane cholla, walkingstick cactus, spiny cholla

Habitat: Found in desert valleys and grasslands as well as oak, pinyon and juniper woodland areas from 2,000 to 7,000 ft. elevation.

Range: Cylindropuntia spinosior can be found from several limited localities in New Mexico and extends into Arizona where it can be found in 7 counties. It is especially seen throughout many areas of southern Arizona and the distribution moves further south and east into Sonora and Chihuahua, Mexico.

Description: This is a very beautiful cholla that has distinct dark green or gray/green stems with short white or gray spines and tuberous areoles. It is commonly seen with red or magenta flowers in and around Tucson and is found in numerous locations throughout southern Arizona. It is also the one cholla that has been photographed numerous times to describe the beauty of the southwestern deserts.

Size: Plants are variable in growth but can attain about 8 feet in height and extend several feet wide. This cholla has a rather open growth pattern and the lower branching stems are usually long, straight and may be spaced rather far apart.

Shape: Cylindrical Stem/Jointed

Flowers: Flowering time can be from early May through June with color variations from light red to dark red, magenta, orange to yellow and rarely a creamy white. The flower size is approximately 1 to 2 inches in width. The fruit is noted for being very tuberculate and at the peak of becoming ripe it turns bright yellow in color and may be tinged with red. The fruit often remains undisturbed on the plant until the following year or even longer.

Propagation: Seed and stem cuttings

Care: This is a very easy species to grow and is very hardy to heat and cold. In areas of the southeastern United States where it has been established in gardens, it is very tolerant of wet and cold weather where it survives and grows very well. When cultivated properly with good drainage it can be a beautiful cholla to add to your garden in a variety of locations.

Comments: The flower color of this species along with the attractive open growth and short whitish spines, place it high on my list for favorable chollas. Over the many years it has become favored for producing a beautiful woody skeleton that was used for making canes, lamps and other items. I tend to appreciate just having this cholla and enjoying its growth and attractive nature. Hybrids of this cholla do exist and notable intermediate characteristics of Cylindropuntia imbricata/spinosior as well as Cylindropuntia fulgida/spinosior and Cylindropuntia versicolor/spinosior have been reported. One of my favorite cholla remembrances is growing a small seedling of this species many years ago and seeing the plant reach a height of 7 feet at my parents home in North Carolina. Adding this cholla to your landscape may encourage native bird nesting locations and can give your garden area a very enticing nesting habitat. Our native plants are important and this Cylindropuntia species should not be forgotten in your desert landscape. It is definitely one of my prickly friends!

Roundtable Discussion

Staging Plants for Show, Décor and Fun

Thursday, February 21, 2013 from 7:00 to 9:00 PM
Junior League of Tucson • Kiva Room
2099 East River Road

Bring some ideas or samples of your C&S plant staging techniques or just come pick up some ideas for presenting your collection. If you have shown plants in competition please share with us your experience. We can discuss formal, eclectic, or utilitarian staging techniques at the groups discretion. Mark your calendar now and on March 21, come out and ask questions, get answers and enjoy talking with others that will share their experiences.

Spring Field Trip

Our spring field trip date is now set. It will be on Sunday, April 21 to visit the Ruby Road area south of Tucson. As all the details get worked out, we will have cost, meeting place and times, and how to sign up, in the March newsletter. There will only be 20 seats available and we want to make sure we come up with a sign up process that will afford everyone a shot at getting a seat.

The Desert Garden Tour

The Desert Garden Tour committee is working hard on the 2013 spring tour.

The date is SATURDAY, APRIL 27, 2013. 9:00 AM - 3:00 PM. The area is East Central Tucson.

We are looking for additional gardens to participate in the area between 22nd St. to Grant Rd. and Craycroft to Campbell. If you are interested in participating, call Bill Salisbury, 299-3011 or email lusalisbury@comcast.net

The Garden Tour Committee consists of:
Ed Bartlett, Robeert Ellis, Patsy Frannea, Nancy Reid
Bill Salisbury, Rim and Marija Tallat-Kelpsa

Silverbell Rescue

Photos by John Durham








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trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, February 14, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

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

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

February 2013

Thursday, February 7, 2013 7:00pm
Monthly Meeting, "Rarely Seen and Rarely Found Native Cacti and Succulents of Arizona"
Presented by Peter Breslin

Tuesday, February 12, 2013 7:00pm
Board meeting at the U of A College of Pharmacy

Thursday, February 21, 2013 from 7:00 to 9:00 PM
Junior League of Tucson • Roundtable Discussion
Staging Plants for Show, Décor and Fun

Acknowledgement of Contributions

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

Unrestricted General Fund
2012
Val Little
John & Jocelyne Rivers

2013
Lee Oler
Chris Shipley
Trina Trimble & Family

Education
2013
Lee Oler

Conservation
2012
Jerry & Colette Price
Howard Grahn & Family

2013
Martha Brumfield
Jeri Barnes
in honor of Jerry Estruth's birthday

Prickly Park
2012
Nancy Tom & Family
David & Mary Liz Freud
Vernon & Diane Kliewer

2013
Lee Oler

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society March 2013

Thursday, March 7, 2013 at 7:00 PM

"The Agaves of Baja California: New Finds, Old Favorites"

Presented by Bob Webb and Greg Starr

The Agaves of Baja California have long fascinated botanists and hobbyists alike owing to their endemism, beauty, hardiness, and the landscapes that they evolved in. Howard Scott Gentry devoted a monograph to these Agaves, describing new species and speculating on their evolution on a long peninsula that once was separated into islands by shallow seas. Now, new species have been described, certain species groups have been revisited, and the time has come to revisit Gentry's assessment of the Agaves of this peninsula that is so iconic to the Sonoran Desert and succulent plants in general.

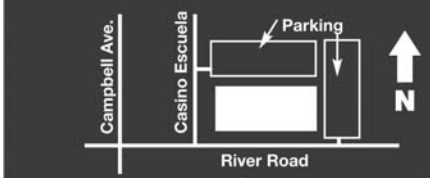
Bob Webb and Greg Starr have been evaluating the Agaves of Baja California for several years as part of larger, separate efforts. Webb has been mapping succulent plant biodiversity on the peninsula for 18 years and described Agave turneri, a new species from near Mexicali, in 2011. Starr has written extensively on the Agaves of mainland Mexico and recently turned his attentions to the Baja Agaves. Using the combined techniques of DNA analysis with good old-fashioned botany, Webb and Starr are coming up with a new framework for characterizing the 26 taxa on this peninsula, all but one of which are endemics.

This will be a special program presentation that you should not miss!. Please plan to attend and enjoy a great program, have some food, talk to those that love cactus and other succulents, win a few raffle plants and also, stay to the closing and take home a free plant!

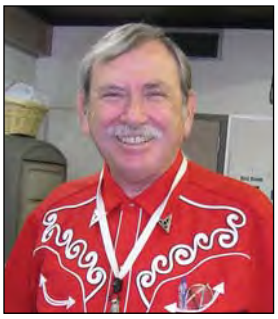
Agave species nova Picachos 25

TCSS Program Presentation
Thursday, April 4, 2013
"Unexpected Discoveries and Observations from an Amateur Cactus and Succulent Geek"
Presented by Root Gorelick

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road



President's Message

It's the first Thursday of the month, and it's the Tucson Cactus and Succulent Society monthly meeting.

Now, I'd like to tell you how this event happens. **Vonn Watkins** (Vice President and Program Chair) scours the country for speakers and programs that you will be interested in. This starts a month, several months, even a year before the program is presented. Arrangements are made with the speaker for transportation, perhaps lodging, meals and an honorarium. A write-up about the speaker and the program must be prepared for the appropriate issue of the newsletter and submitted to **Karen Keller** (Desert Breeze Editor) and also to **Keimpe Bronkhorst** (our webmaster) for inclusion on the front page of our website.

When all the contributions are made to the newsletter and it's ready for print, black and white copies are printed and sent out to everyone who has paid extra for a printed newsletter. This is one of my responsibilities. A color copy is sent to Keimpe for posting on the web. The last 11 years are available on our website.

Hopefully, I have updated any changes to memberships and sent them out and updated **Joie Giunta** (the Librarian) with the barcodes of new members so she can put them in her database so library books can be checked in and out easily. New or changes of emails are sent to **Joe Frannea** (Treasurer). He also prepares payment for the speaker, refreshments and for all the free plants, raffle plants and door prizes that are purchased for a meeting. Joe sends out an email to everyone that the newsletter is on the web, a meeting reminders and other news. This is in addition to his regular Thursday night Rescue Notice.

Donna Ellis is out procuring plants based on the speakers program if possible and preparing information about the plants and how to grow them. She and **Robert Ellis** set up the raffle and door prize table and give out the free plants at the end of the meeting.

Doug Rowsell prepares microphones, projectors and installs the programs for presentation to make sure the speakers have everything technically needed to have a great program.

Patsy Frannea (refreshment chairwomen) and her fabulous committee prepared refreshments for the break and set the tables for food from the committee or brought by members. She also makes sure we have her famous Prickly Pear Punch for meeting attendees. We probably have the best food break of any society.

Volunteers set the room up in theater style, taking down the round tables until the end of the meeting in which volunteers need to reset the room for the group that comes in the next morning. The carpet needs to be vacuumed and we have our own vacuum on site.

Marty Harow and **Evelyn Hubbell** set up the membership table with brochures, pamphlets, raffle and donor tickets, new membership applications and more. The guest book is opened and signed so Bill Hick can introduce and make the meeting guests feel welcome.

Tables are set for **Linda Bartlett** to bring our supply of T-shirts for sale. Early arrivals also get a chance to pick some free plants and cutting brought by other members. This has become very successful.

I prepare an agenda for the meeting and gather announcements of importance and make sure other chairs have an opportunity to present their activities. A lot of members make our meetings possible and then . . .

"Its 7:00pm: Please turn off your cell phones."

"Welcome to the March meeting of the Tucson Cactus and Succulent Society"

Thank you for your support,

Dick Wiedhopf, President

Green Valley Gardeners' 2013 Spring Fair

Sunday, March 24, 2013 – 9AM to 3PM

Free and Open to the Public

Sponsored by the Green Valley Gardeners (GVG)
and the Tucson Cactus and Succulent Society (TCSS)

What:
A Cactus and Succulent and pottery sale featuring about ten local businesses in the Greater Tucson area including Green Valley. The TCSS Cactus Rescue Crew will also be selling a few bare rooted golden hedgehogs, smaller barrels and Mammillaria.

There will also be four or five 45 minute educational presentations on the hour starting at 10 AM, featuring various cactus and succulent topics. These are free and open to the public.

Location:
Green Valley - Courtyard at the Continental Shopping Plaza.

Directions:
From Tucson, head south on Interstate 19 towards Nogales and exit at Continental, exit #63. Turn Right on Continental, then right again at first stoplight (about a half a block) going into the shopping center. Head way to the back left side, next to the True Value Hardware store, the Courtyard area is next to them.

Sales:
Central cashiers will accept cash, checks, Visa, and MasterCard. Additional information will be posted on the TCSS web site as it develops.

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

There is a new fun thing to do at our monthly TCSS meetings! If your favorite cactus or succulent has lost its nametag or has always been a mystery plant, bring it to a meeting and place it on our "What is it?" table. Photos will work, too. We have many knowledgable members who will then try to identify your plant.

Growing in the Desert Series:
Another Record Freeze!

by Mark Dimmitt

What? Again? Southern Arizona had catastrophic freezes in 2007 and 2011, which were both rated as 30- to 50-year events. Now we've had another in January 2013, the third severe freeze in six years. The 2011 freeze was the worst in most of the Southwest, largely because it was accompanied by high winds that added to the heat loss and blew away many frost covers. (It has long been assumed that it cannot freeze in Tucson if there is any wind, which prevents cold air drainage.) The lows in February 2011 at my place at the eastern base of the Tucson Mountains were two nights of 18° F, with a high of only 36 between them. It was colder on the east side of the basin.

There are numerous microclimates in the greater Tucson area. On our normally calm winter nights cold air drains downhill. Therefore the coldest areas are valley bottoms and washes that drain the mountains; these areas experience several nights in the teens almost every winter. In contrast, south-facing slopes such as in the Catalina foothills may not have any frost for a decade or more. But this general rule can be broken on windy nights and severe Arctic outbreaks, during which the coldest areas are wherever the frigid air mass descends to the ground. In 2011 the Catalina foothills were as cold as the valley bottoms, and the normally safe tropical plants there were seriously damaged.

This year's January freeze broke many temperature records, but in the absence of wind there appears to have been less damage than from the 2011 freeze in most areas. (See reports from a few colleagues below. But I wonder if the reports of less damage stems in part from the fact that so many plants perished in 2011 and weren't around to be tested in 2013?) My neighborhood seems to have taken the worst of the 2013 event. I'm normally 6 degrees colder than the "official" airport temperature. That was true for this freeze too, but the forecast was spectacularly wrong, as usual. (In my 34 years in Tucson, the weather service has not once forecast a severe freeze more than a day in advance. It appears that their models are so heavily weighted toward the mean temperature for the date that they can't predict extremes.) On the morning of the fourth day of the five-day freeze, the forecast was for a low of 23 F. But that night it fell to 17 at the airport, and 11 at my house. A thermometer at the lowest point on my property recorded 7. In 2011 I did not have the high winds that most people suffered, so consequently this was the most damaging frost I've ever had.

A list of survivors and casualties in my collection during the past two freezes are contained in Table 1. Some noteworthy results:

- *Welwitschia mirabilis* planted in the ground and covered with a blanket froze to the caudex, but is already regrowing (Figure 1).
- *Boophone spp.*, including *B. ernesti-ruschii,* suffered only minor leaf damage under a clear plastic cover (Figure 2). *Boophone disticha* in the ground in the open lost nearly all foliage.
- *Encephalartos horridus* is unscathed (Figure 3); it was in an enclosed patio that got down to 24°.
- *Zamia furfuracea* next to the *Encephalartos* above and covered with a blanket lost all its leaves for the second time in three years. Zamia floridana in the open outdoors also lost all leaves, but another one against a wall is undamaged. Gene Joseph reported the same pattern. This is a pretty tough cycad.
- *Euphorbia decaryi* in the patio at 24°: undamaged.
- *Aloe claviflora* was untouched under a cover. My several other supposedly hardy aloes, except for *A. variegata*, suffered severe damage in the open.
- *Trichocereus pachanoi* plants were badly damaged, especially unestablished cuttings (Figure 4 foreground). Cuttings of the related T. scopulicolus (background of Figure 4) were undamaged, as was the mature plant (Figure 5).
- *Ferocactus herrerae* (Figure 6) were severely damaged; some will probably die. I have most of the barrel species except those from the far south of the genus' range, and none were damaged except this one.
- *Haworthia truncata* in the patio and under a blanket: undamaged (Figure 7). *Crassula argentea* (jade plant) on the same bench perished.

So have we learned anything yet about landscaping in Tucson? With each of these catastrophes, we add to our knowledge of what is reliable here, and which plants need protection at what temperature. But a bigger lesson is becoming clearer.

The events of the past few years are consistent with the models of global warming. The actual warming is barely noticeable at our latitude. A more significant effect of the warming is climate destabilization, resulting in more frequent extremes. If the models are right, we can expect both more hard freezes AND more heat waves; more droughts AND more floods. Moreover, the models predict that the waves in the jet stream will slow down, meaning that extreme events will be not only more common, but will last longer. January's freeze lasted five consecutive nights; that hasn't happened since 1971. If this is our future, we should be considering: a) choosing hardier plants for our collections; b) spending more money on frost blankets; or 3) moving south. (Hint: Aduana, near Alamos in southern Sonora, has never recorded a frost. Sounds great, huh?)

Notes from around town

Bob Web reported from the Barry Goldwater range in western Arizona: "I noticed that quite a few native plants were damaged by the freeze, which my companion said reached 15-17 F over there. *Encelia farinosa, Parkinsonia microphylla*, various *Ambrosia (particularly A. ambrosioides)* were seriously damaged, with dead or dying leaves and branches." (My palo verdes seem to be undamaged. –MAD)

Matt Johnson (far east side): "It got down to 8 F in my shade house, which is a new record low. I didn't have a thermometer placed in the lower part of our lot, but it usually runs another 4 F colder in that area. For the five coldest nights, my lows were 14, 12, 12, 8 & 15 F. I don't recall a previous freeze when the coldest night was so far into the cold spell.

Too early to tell about damage on a lot of things, but the two large Agave vilmoriniana in the patio that made it through both 2007 and 2011 with relatively minor damage have extensive yellowing, and my last surviving *Stenocereus alamosensis* also appears to have suffered considerably more damage

than in 2011. It looks like a few individual plants of at least two *Thelocactus* species in containers in the shade house were hit, in spite of being covered. I haven't seen that before. So far, senitas (which had stem tips covered) appear to be okay."

Michael Chamberland: "I was in Sonora during the first night of this run of cold weather. In Magdalena the freeze made the front page of the local newspaper. There was a photo of someone holding up a sheet of ice. Later in the day, driving through Curcurpe, the river crossing was strewn with masses of ice - and there were organ pipes on the hills. We explored around El Bajio and I found organ pipes, Fouquieria macdougallii, and Jatropha cordata growing on rocky hills, all regrowing from damage from the 2011 freeze.

Fortunately I had covered or moved indoors hundreds of plants before the trip. I returned in time to move hundreds more inside, not to trust mere covering, before the coldest night set in. At my house I had a minimum of 18F. I do not know how accurate my thermometer is, but the same device recorded a maximum low of 13F in 2011. Between the "warmer" temperature, lack of wind, and unprecidented number of potted plants I moved into the house, I expect the damage will be far less than in 2011."

Gene Joseph (west of U of A): "I had 15° out back at our home property. I still haven't entirely figured out why it's so cold back there (drainage? shaded during day?), but our porch was 19°. My regular thermometer was under frost cloth, so I can't count that. The damage this year was not as bad as '11, I think primarily because of the lack of wind. Mark, that wind was a whole new aspect of cold damage that will be hard to pin down in a frost damage list.

In 2011 I resolved not to change my protocol for severe cold, based on one year of extreme cold, supposedly a multi decade event, but now I have done a 180°. I am planning heaters for more greenhouses and setting up more frost cloth (which worked very well this year because of the lack of wind). I hate global weirding!!"

David Palzkill: "I had 15F at my nursery on Ina; this is the coldest I've ever recorded there. I've gotten down to 16F several times over the past 10 years. South side of Ferocactus in containers damaged."

Miles Anderson (Avra Valley): "We were 14.4, the lowest we've ever have had, but without the wind, not as bad as 2 years ago (15F)."

Figure 1. This Welwitschia is planted in the ground, and is covered with a double layer of cloth on freezing nights. Photo was taken two weeks after the 5-night freeze. The leaves were killed to the base, but are already beginning to grow out. This is a

Figure 2. Boophone ernesti-ruschii (in back) survived with only minor damage under clear plastic. Of two Boophone haemanthoides (front two plants), one had slight damage, while the other clone with less mature leaves lost half of them.

Figure 3. Encephalartos horridus survived undamaged. Damaged plants around it include (l to r) Sansevieria cylindrica 'Skyline', Pachypodium decaryi, Billbergia rosea, and

Figure 4. Unestablished cuttings of Trichocereus pachanoi (foreground) were mostly killed; older plants suffered severe tip damage. Cuttings of T. scopulicolus (greener stems in background) were undamaged.

Figure 5. Trichocereus scopulicolus was completely untouched, even the exposed tips. The species is essentially a more robust, hardier San Pedro (T. pachanoi).

Figure 6. Ferocactus herrerae with ribs badly frozen on the southeast side of the plant.

Figure 7. Haworthia truncata skated through under a fiberglass roof and a tarp. The jade plant (Crassula argentea) perished.

FROST RECORDS 2011 & 2013 Address: Oxbow Road Location: eastern bajada of Tucson Mts
February 2011**:** Low-high-low: 18-36-18 F
January 11-15 2013: 5 day lows 20, 18, 19, 11, 19 (4° colder at bottom of property in orchard)
8-10° warmer in patio, lowest was 24 F

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Adenium Arabian Ruby	unheated enclosed glass patio 22°	Killed to 2" stems		
Adenium arabicum	Unheated enclosed glass patio 22° + covered	Killed to ½" stems	unheated enclosed glass patio 24°	Killed to ½" stems
Adenium somalense nova	unheated enclosed glass patio 22°	Killed to 3" diam. stems		
Agave bracteosa	desert tree	OK	desert tree	OK
Agave colorata	open	OK	open	OK
Agave ovatifolia	desert tree	OK	desert tree	OK
Agave parryi truncata	open	OK	open	Small pups damaged
Agave pelona	open	OK	open	OK
Agave titanota			open	Killed; sheltered pup OK
Agave victoria-reginae compact	desert tree	OK	open	OK
Alluaudia montagnacii	unheated enclosed glass patio 22°	Foliage killed; stems?	unheated enclosed glass patio 24°	Dead
Aloe capitata	double cover	Half of leaves killed		
Aloe claviflora	covered	OK	covered	OK
Aloe cryptopoda	double cover	OK	open	OK
Aloe excelsa	double cover	Severe damage		
Aloe hereroensis	double cover	OK		
Aloe Kelly Griffin hybrids	double cover	Leaf tips killed		
Aloe marlothii	against wall	Minor tip damage	Against wall	Minor tip damage
Aloe peglerae	double cover	killed		
Aloe reitzii	double cover	Terminal 1/3 of leaves killed	open	Severe damage
Aloe saponaria	open	Outer halves of leaves killed	open	Outer 2/3 of leaves killed
Aloe variegata	open	Leaf tips killed, smaller rosettes killed	open	Minor damage
Aloe vera (pure)	open	95% killed	open	95% of biomass killed
Aloe vera hybrid	open	Outer halves of leaves killed	open	Outer 1/2 of leaves killed
Ansellia africana	unheated enclosed glass patio 22°	killed		
Astrophytum capricorne	open	OK		

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Astrophytum myriostigma	open	? Stems solid, but discolored		
Billbergia kuhlmannii			Unheated enclosed glass patio 24°	OK
Billbergia rosea			Unheated enclosed glass patio 24° +cover	Nearly killed
Bletia purpurea	unheated enclosed glass patio 22°	OK		
Boophone 4 spp.	double cover	OK		
Boophone disticha			open	Leaved killed
Boophone ernsti-ruschii			cover	Minor leaf damage
Boophone haemanthoides			cover	1 OK, 1 leaf-killed
Bursera fagaroides (odorata)	unheated enclosed glass patio 22°	Killed to ½" stems		
Bursera penicillata	unheated enclosed glass patio 22°	Killed to 2" stems		
Calliandra californica	open	Top-killed	open	Tk
Cheiridopsis purpurea	unheated enclosed glass patio 22°	OK	Desert tree	Dead
Citrus incl. lime			Unheated enclosed glass patio 24° +cover	OK
Clivia miniata	unheated enclosed glass patio 22°	80% foliage killed	Unheated enclosed glass patio 24°	Severe foliage damage
Clivia miniata	Unheated enclosed glass patio 22° + covered	OK	Unheated enclosed glass patio 24°	OK
Cochemiea setispina	open	Tips killed	Open	Major tip damage
Coryphantha elephantidens	desert tree	Tubercles killed; small heads killed	cover	Some tubercles killed
Costus barbatus	unheated enclosed glass patio 22°	top-killed	Unheated enclosed glass patio 24°	All but one stem killed
Cotyledon orbiculata flat leaf	covered	90% killed	cover	Wilted but recovering
Cotyledon orbiculata other forms	double cover	OK	cover	OK
Cotyledon orbiculata terete leaf	open	OK	open	OK
Cylindropuntia molesta	open	OK	open	OK?
Cymbidium canaliculatum hybrid	unheated enclosed glass patio 22°	OK	Unheated enclosed glass patio 24° +cover	OK
Cymbidium hybrids	unheated enclosed glass patio 22°	OK		

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Cynanchum marneirianum	unheated enclosed glass patio 22°	OK	Unheated enclosed glass patio 24° °	¾ killed
Cyphostemma juttae	double cover	OK		
Dendrobium speciosum			Unheated enclosed glass patio 24° +cover	OK
Deuterocohnia brevifolia	unheated enclosed glass patio 22°	OK		
Dioon edule	open	OK	open	Some leaf tips dead
Echinocereus brandegei	open	Severe damage	open	Nearly dead
Encephalartos horridus	unheated enclosed glass patio 22°	OK	Unheated enclosed glass patio 24°	OK
Encyclia adenocarpa	unheated enclosed glass patio 22°	Some foliage killed		
Eriocereus jusbertii	desert tree	Killed to ground	Desert tree	Most stems top-killed
Eulophia petersii	Unheated enclosed glass patio 22° + covered	OK		
Euphorbia cylindrifolia	unheated enclosed glass patio 22°	OK		
Euphorbia decaryi			unheated enclosed glass patio 24°	OK
Euphorbia Zig Zag	double cover	Killed		
Ferocactus emoryi southern Son.	open	OK	open	OK
Ferocactus herrerae	open	Minor rib burn?	open	Severe rib damage
Ferocactus latispinus	open	OK	open	OK
Ferocactus rectispinus	Open	OK	open	OK
Ferraria crispa	Double cover	80% top-killed		
Fockea edulis/crispa	Unheated enclosed glass patio 22° + covered	Foliage killed		
Fouquieria columnaris	open	Foliage killed (tips covered, OK)		
Fouquieria macdougalii	unheated enclosed glass patio 22°	OK		
Gardenia	open	OK		
Gerbera jamesonii	desert tree	Top-killed		
Grusonia invicta	open	??	open	Looks awful, but that's normal
Haworthia truncata	unheated enclosed glass patio 22°	OK		
Hippeastrum papilio	unheated enclosed glass patio 22°	OK		
Hippeastrum papilio	covered	Major leaf damage		

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Hippeastrum reticulatum striatifolium	covered	top-killed	covered	Top-killed
Hylocereus undatus dragonfruit	Unheated enclosed glass patio 22° +covered	OK		
Justicia candicans	open	Top-killed		
Justicia spicigera	open	Major damage		
Justicia spicigera	desert tree	OK	Desert tree	Top-killed
Lachenalia aloides quadricolor	double cover	OK	cover	OK
Lachenalia spp.	double cover	Leaves wilted; most recovered		
Lemon Meyer dwarf	Unheated enclosed glass patio 22° + covered	OK		
Leucocoryne hybrids	double cover	OK		
Lithops spp.	unheated enclosed glass patio 22°	OK	cover	OK
Lophocereus schottii monstrosus	desert tree	6” tips killed	Desert tree	6” tips killed
Lophocereus schottii monstrosus	open	Severe damage to killed		
Lophocereus schottii schottii, thick- stemmed form	open	Ribs killed	open	Less mature stems killed
Mammillaria geminispina	open	Tips killed		
Mammillaria geminispina	Desert tree	OK		
Mammillaria guelzowiana	desert tree	Killed		
Mammillaria littoralis	unheated enclosed glass patio 22°	OK	cover	½ of stems killed
Mammillaria plumosa	desert tree	OK	Cover	OK
Mammillaria rubrograndis	desert tree	OK		
Mammillaria saboae haudeana	desert tree	OK	30% shade	OK
Myrciaria cauliflora			Unheated enclosed glass patio 24° +cover	Minor leaf damage
Nyctocereus serpentinus	desert tree	90% killed	Desert tree	95% killed
Olneya tesota	open	Foliage and twigs killed	open	Foliage & twigs killed
Opuntia ficus-indica hybrids	open	Most pads killed; one clone OK	open	Hardy clone: terminal pads shattered
Opuntia leucotricha	open	80% killed	open	90% killed

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Opuntia sulfurea "A clone"	open	OK, but pads disarticulated		
Ornithogalum dubium	double cover	OK		
Ornithogalum juncifolium	double cover	OK		
Ornithogalum pyrenaicum	double cover	Leaves killed		
Pachycormus discolor			Unheated enclosed glass patio 24° +cover	Major damage
Pachypodium geayi	unheated enclosed glass patio 22°	Killed to 2" stems		
Pachypodium lemarei ramosum	unheated enclosed glass patio 22°	Killed to 4" stems		
Pachypodium namaquanum	unheated enclosed glass patio 22°	OK		
Pancratium maritimum	desert tree	OK		
Papaver paeoniifolium	covered	Moderate damage, recovered	open	Severe damage
Peniocereus striatus	unheated enclosed glass patio 22°	OK		
Peniocereus tepalcatepecanus	unheated enclosed glass patio 22°	OK		
Phacelia campanularia	open	Most foliage killed; recovering	Open, 7°	Minor damage
Rhodophiala bifida			open	OK
Sansevieria cylindrica	unheated enclosed glass patio 22°	OK		
Sansevieria cylindrica	unheated enclosed glass patio 22°	OK	Unheated enclosed glass patio 24°	¼ of leaves killed
Sansevieria fischeri	unheated enclosed glass patio 22°	OK		
Selenicereus macdonaldii	unheated enclosed glass patio 22°	Some stems killed		
Sparaxis hybrids	double cover	About half of plants killed		
Sparaxis hybrids	open	Killed		
Stapelia flavopurpurea	unheated enclosed glass patio 22°	OK		
Stapelia gigantea	unheated enclosed glass patio 22°	OK		
Stapelia gigantea			unheated enclosed glass patio 24°	1 clone OK; other ½ dead
Stenocereus eruca	open	90% of stems killed		
Stenocereus eruca	Desert tree (Larrea)	OK		
Strelitzia reginae juncea	unheated enclosed glass patio 22°	OK		

PLANT	EXPOSURE 2011	RESULT 2011	EXPOSURE 2013	RESULT 2013
Trichocereus hybrids	open	OK (9° killed some in Sierra Vista)	open	OK
Trichocereus pachanoi	open	6" tips killed	open	Unrooted cuttings killed; established plants major tip damage
Trichocereus scopulicolus	open	Minor rib burn	open	OK
Trichocereus terscheckii	open	OK	open	OK
Triteleia uniflora	desert tree	OK	open	Few leaves killed
Tritonia crocata	double cover	OK		
Urginea maritima	open	Leaves wilted; most recovered	Open	Leaves wilted, recovered
Welwitschia mirabilis	double cover	¾ of leaves killed; regrowing	Double cover	Killed to caudex, regrowing
Zamia floridana	Desert tree, against wall	OK	Against wall	OK
Zamia floridana			open	Leaves killed
Zamia furfuracea	unheated enclosed glass patio 22°	Most leaves killed	Unheated enclosed glass patio 24° +cover	All but 1 leaf killed
Zamia furfuracea	double cover	Top-killed (one leaf OK)		

My Prickly Friends

Cylindropuntia fulgida

Family: Cactaceae
Genus: Cylindropuntia
Species: fulgida (Engelmann) F. M. Knuth
Common Name: Chain Fruit Cholla, Jumping Cholla

Habitat: Found in the low desert from below 1,000 feet to grasslands and hillsides at over 3,000 feet elevation.

Range: In the United States this plant is only found in or near the Sonoran Desert region of Arizona. It extends south and southwest into Sonora and Sinaloa, Mexico.

Description: This arborescent (tree-like) species with the beautiful golden or silvery spines is very eye catching and can also be amazingly hazardous if one comes in contact with the stem segments, mainly because of the tiny micro-barbs at each spine tip. The woody trunk, multi-stemmed appearance and chain fruit segments makes this cholla easily recognizable. As the common name implies, this is truly a chain-fruit cholla. The fruit will be easily seen hanging in large quantities from the main plant.

Size: Large plants may be seen growing to around 8 feet or more wide and over 10 feet in height.

Shape: Cylindrical Stem/Jointed

Flowers: Flowers are light to dark pink in color and the typical flowering time can be from May through August. The flower size is approximately 1 to 1.5 inches in width. Flowers are produced from new buds that grow from older fruits and they may open late in the day and stay open into the night. The fruit color is usually green but segments can also be light red and may remain undisturbed on the plant for many years as they continue to produce extended fruit chains.

Propagation: Most significantly by removal of stems or fruit. This cholla is one of the most self propagating of all. In habitat the stems and fruit may detach easily, fall to the ground, take root and produce a new plant.

Care: Once the plant is established, care should not be an issue and it can be pretty much left alone. It is a very hardy desert cholla and can take some very cold temperatures, but persistent freezing temperatures can be damaging to the stems.

Comments: I remember when I first arrived in Arizona and was amazed at the size and abundance of this species. It is a real survivor and can be found in a number of locations throughout central and southern Arizona. Another variety, *Cylindropuntia fulgida var. mammillata* is a plant with fewer spines along the stem segments and the “Boxing Glove” variety can be found in many nurseries and garden centers. This is quite an unusual plant that forms crested stems that may look similar to a boxing glove and these plants are commonly only a few feet tall and can be quite a novelty. Many years ago before development there were reports of huge cluster populations containing extra large plants of *Cylindropuntia fulgida* just south of Broadway Blvd. from Rosemont Blvd. to Swan Road in Tucson. Development has displaced those populations but there are other cluster populations that remain undisturbed. The growth of this cholla is sometimes so thick it can be a real challenge to get through the area without catching a few hitch-hikers (stem segments). The skeletal wood of this plant has also been used as an ornament in landscapes and gardens, and this is another cholla that some birds such as cactus wrens and curved-bill thrashers, really favor for a nesting sight. Indeed, this is one of my favorite prickly friends and should always be considered if you may want a living security fence! A row of these planted along a wall would certainly discourage an intruder.

Silverbell Rescue

Photos by John Durham






Tucson Cactus & Succulent Society

Financial Summary - Year 2012

INCOME	Total	$90,251
Memberships & Meetings		$13,504
Sonoran IX & G.V. Expo		$44,582
Cactus Sales & Silent Auction		$23,148
Donations Received		$9,017

EXPENSES	Total	$102,077
Meetings & Newsletters		$10,949
Sonoran IX & G.V. Expo		$42,916
Cactus Sales & Silent Auction		$17,657
Pima Prickly Park Implementation		$8,935
Operating & Library Expenses		$11,315
Florilegium Expenses		$2,061
Grants & Awards Given		$8,244

CASH ASSETS by FUND	Total	$75,006
Discretionary (General Fund)		$28,929
Cactus Rescue Crew Reserve		$10,000
Education Outreach Fund		$16,049
Research Grant Fund		$10,069
Conservation Grant Fund		$2,365
Florilegium Fund		($421)
Pima Prickly Park Fund		$8,015

DON'T MISS THIS OPPORTUNITY

Job Description
TCSS Education Outreach Chair

Role of the Education Outreach Chair

To represent the Tucson Cactus and Succulent Society in matters related to education outreach regarding cactus and succulents. (see current activities below*)

- K – 12 Teacher Grant Program
- FUNFEST, School Science Nights, etc. (Cactus Model Building Exercise)
- Discussion and Q&A Events (e.g., Earth Day events)
- Science Fair Judging (SARSEF and other fairs as requested)

Challenges and Opportunities

Review existing education materials (cactus models, display posters, etc.) to identify improvements and expansion utilizing consultation with the expertise available in TCSS. The Education Outreach Chair is not required (nor expected) to personally participate in every Education Outreach event.

Please contact John Swarbrick, Joe Frannea or Dick Wiedhopf for more information.

* John Swarbrick will continue to lead the Cactus Model Kit production team and Joe Frannea will coordinate some of these activities and both will continue to actively support TCSS Education Outreach.

“From The Florilegium”

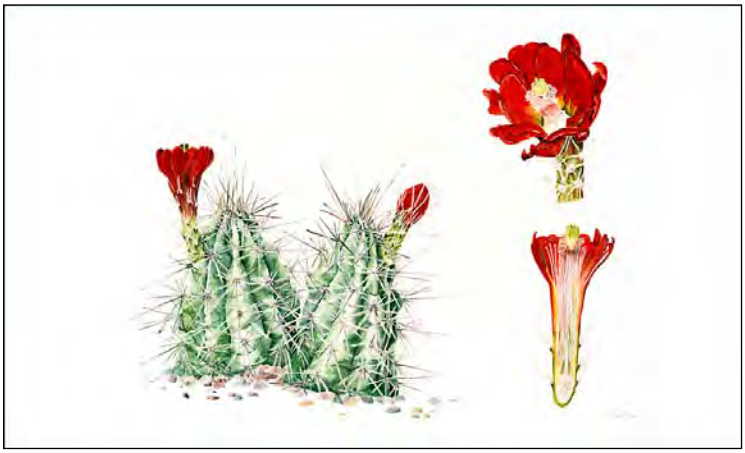
A favorite of Broad-billed, Black-chinned, Blue-throated, and Magnificent hummingbirds, Echinocereus coccineus blooms from late March to early June. Two of the depictions here of the dissected flower show the dense barrier of filaments that protect the ovary from damage by a hummingbird’s bill. Compared to the other hummingbird flowers, those of the claret cup cactus are huge. This is unusual; the flower fits the head rather than just the bill of the hummingbird. Experiments indicate that hummingbirds prefer not to enter large flowers, possibly because of predation risk. A flower must therefore provide a valuable reward for the bird: 30 mg of sugar production per day, at a concentration of 29%. Typical hummingbird flowers in the southwestern U.S. produce only 1-4 mg of sugar per flower per day. – Gillian Rice

Gillian Rice grew up loving nature in her native England. Following a career teaching marketing, she is professor emerita at Thunderbird School of Global Management as well as a freelance writer and artist. Gillian finds dissecting flowers and examining them with the microscope especially exciting when she discovers tiny creatures living among the petals.

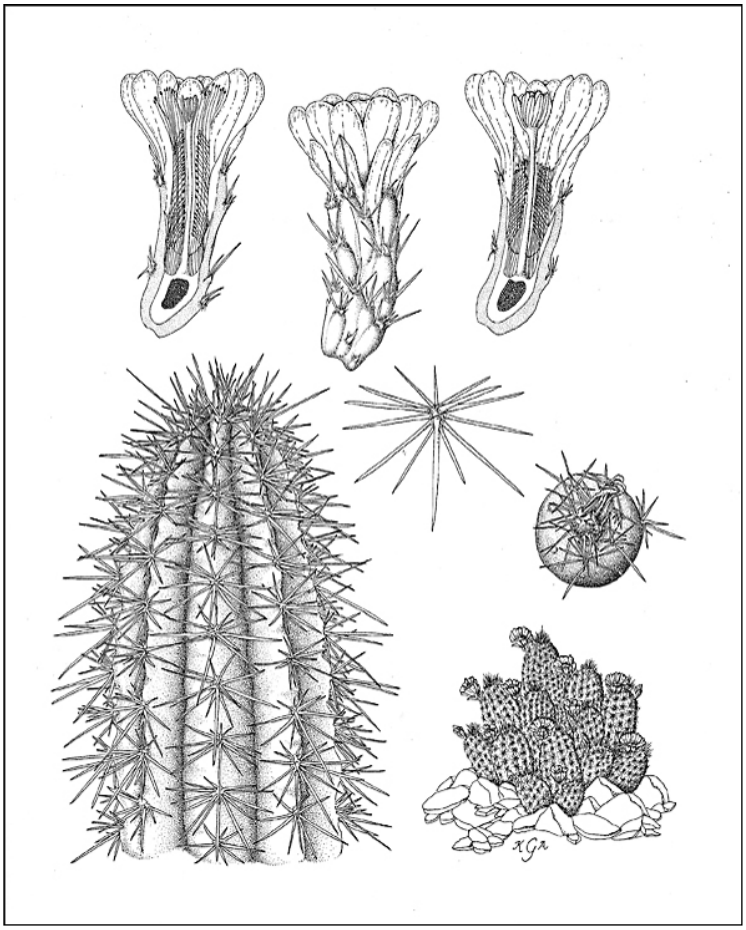
Karen Gengle studied art and foreign languages at Kalamazoo College and has a Masters in International Management from Thunderbird School of Global Management. Her lifelong passion for art and nature found expression in the Desert Botanical Garden Illustration Program. She is currently lending her artistic talents to the New York Botanical Society’s Intermountain Flora Guide, the U of A’s Legumes of Arizona, and University of Alaska’s Ephedra project.

These three intricate interpretations of the Echinocereus coccineus were exhibited in 2012 at the Tempe Public Library’s exhibit Indigenous Botanicals of Arizona, and the two watercolors are currently on exhibit in Portraits of Nature which runs through March 30 at ASU Library’s Polytechnic Campus. Additional works by these two artists can be seen on the Illustrations Index page of the Florilegium Program’s website **www.sonorandesertflorilegium.org**.

Echinocereus coccineus © Karen Gengle 2010 Watercolor



Echinocereus coccineus © Gillian Rice 2010 Watercolor



Echinocereus coccineus © Karen Gengle 2010 Pen and Ink

Desert Botanical Gardens Bus Trip

For the last several years, the Board of Directors has authorized offering this trip. We are planning a trip to the Desert Botanical Garden on Sunday, April 7, 2013. This is the day for the Central Arizona Cactus and Succulent Society Show to be held. Following DBG, we will go to Arizona Cactus Sales in Chandler. We will leave Tucson at 7:30 AM and will return between 5:30 and 7:30 PM. The cost of the trip will be $40. This will include the bus, snacks, lunch and admission to the gardens. In order to finalize the trip, we will need a minimum of 40 paid participants by March 8, 2013.

Please send in your checks to reserve a spot to:
TCSS Bus Trip
PO Box 6575, Tucson, AZ 85728-4759

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

Secretary: Susan Durham
secretary@Tucsoncactus.org

Treasurer: Joe Frannea
treasurer@Tucsoncactus.org

Board of Directors:
board@Tucsoncactus.org
(Ending Dec. 31, 2013)
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Dale Johnson

CSSA Affiliate Rep:
Bill Holc*ombe (2013)*

Cactus Rescue
cactusrescue@tucsoncactus.org

Cactus Rescue: Chris Monrad/Joe Frannea

Education: Open
Free Plants: Open
Floilegium: Margaret Pope • art@Tucsoncactus.org
Librarian: Joie Giunta • librarian@Tucsoncactus.org
Prickly Park: Jesse byrd (Implimentation)
park@Tucsoncactus.org
Programs: Vonn Watkins • programs@Tucsoncactus.org
Refreshments: Patsy Frannea • refreshments@Tucsoncactus.org
Technology: Open
Research: Doug Rowsell • research@Tucsoncactus.org
Garden Tours: Bill Salisbury • tours@Tucsoncactus.org
Field Trips/tours Rob Romero/Joie Guinta
trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, February 14, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

January Refreshments
Those with family names beginning with B, C, D, E, F, G, and H please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed! the meeting. Your generous sharing will be greatly appreciated and enjoyed!

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

March 2013

Thursday, March 7, 2013 7:00pm
Monthly Meeting, "The Agaves of Baja California: New Finds, Old Favorites"
Presented by Bob Web and Greg Starr

Friday, March 8 through March 24, 2013
Spring Plant Sale Fundraiser
"Members-only" preview shopping on Friday, March 8. Sale opens to everyone March 9-24, Spring Plant Sale Fundraiser - daily. Boyce Thompson Arboretum. Arboretum members save 20-percent on plant purchases during the opening weekend. On Friday March 8, the members have first choice of the plant sale stock, and then the sale continues March 9-24. The Spring Plant Sale is a great place to stock-up on plants for your own garden, backyard or patio. Most of the plants available for purchase during the event are grown by Arboretum horticultural staff in the Arboretum's own nurseries. arboretum.ag.arizona.edu/plantlist.html

Tuesday, March 12, 2013 7:00pm
Board meeting at the U of A College of Pharmacy

March 15, 2013 - March 17, 2013
Desert Botanical Garden Bi-Annual Plant Sale
The Desert Botanical Garden Plant Sale Festival is a one-stop extravaganza featuring the largest selection of arid-adapted plant material found anywhere in Arizona

Thursday, March 24, 2013 from 9:00am to 3:00 PM
Green Valley Gardeners' 2013 Spring Fair with TCSS Member Businesses selling cacti and succulents. Some smaller rescued cacti will be sold as well. There will be Educational Presentions: Courtyard at the Continental Shopping Plaza

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.

Prickly Park
Tony & Cass Knight
Southwest Gardners
Mary A Miller

Conservation
Bruce & Ann Anderson

General Fund
Bob Wright
Bruce & Ann Anderson

Educational Outreach
Bruce & Ann Anderson

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society April 2013

Thursday, April 4, 2013 at 7:00 PM

"Odd plants in odd places: Why an evolutionary and ecological theorist studies the natural history of cactus and succulents"

Presented by Root Gorelick

Part I: Plants in unexpected places Euphorbia antiquorum meters from the Andaman Sea, Stenocereus eruca on mainland Baja, Coryphantha dasyacantha in New Mexico and Ferocactus emoryi in Maricopa and Pinal Counties

Part II: Surprising cactus biology Mammillaria grahamii without chlorophyll in Tempe and Gynodioecious cacti with showy flowers

Part III: Cephalia are not adaptive Terminal cephalia: Melocactus, Discocactus, Backebergia, Arrojodoa, Stephanocereus Lateral cephalia: Espostoa, Espostoopsis, Cephalocereus, Micranthocereus, Facheiroa Branching cephalia and determinant growth of areoles: the odd case of Coleocephalocereus

Root Gorelick is an associate professor of biology, mathematics & statistics, and interdisciplinary studies at Carleton University in Ottawa, Ontario, Canada. He teaches plant form and function, evolution of sex, and Indigenous perspectives in ecology and evolution. His research is largely in evolutionary theory, mostly on evolution of sex and evolution of biodiversity, but is pleasantly surprised that many of his graduate students are working on climate change biology. Before Carleton and his PhD, Root worked and was trained in mathematics, physics, and economics. He also spent a year advising the Bush administration on their non-existent environmental policy. Root recently was appointed to a second term as editor of Haseltonia (send him your technical manuscripts). As is true with almost all decent academic botanists, Root has a brown-thumb. He only grows cacti that will survive with no care, except for weeding. Given that most years Ottawa has at least a week around -30°C, usually just a few weeks before he taps the surrounding sugar maples, these few species of Maihuenia, Pediocactus, Coryphantha, Cylindropuntia, and Opuntia have to be tough. Root usually commutes to work via canoe along the Rideaeu River, often seeing beavers, otters, muskrats, lots of birds, and many aquatic plants. Occasionally this entails over long stretches of frozen river . Sometimes this means showing up for teaching or meetings with a paddle in hand and really cold toes. While on sabbatical at the beach on the central coast of California, he is trying to make up for this lack of canoeing with the proxy of a stand-up paddle-board.

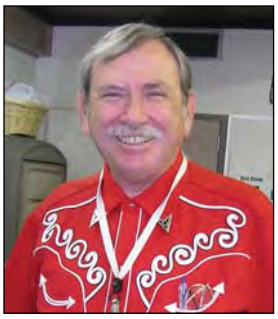
This will be a very special program presentation from the past and present editor of the CSSA Haseltonia Journal. Please plan to attend the excellent presentation that should be high on your list of things to do in 2013! Come and enjoy a fantastic program, have some food, talk to those that love cactus and other succulents, win a few raffle plants and be sure to stay and take home a really free plant!

Melocactus paucispinus with its tiny photosynthetic portion and enormous cephalium looks comical. If we had not been so familiar with these plants, we might think they were grafted or a hoax. Why would any plant evolve such a strange architecture, especially a genus that has been so successful, with representatives throughout most South American and Central American deserts, as well as the Caribbean?

While Discocactus catingicola is probably closely related to Melocactus, it is not quite as maladaptive as Melocactus. As can be readily seen here, unlike with Melocactus, photosynthetic portions of Discocactus can continue growing once a cephalium has formed.

Some specimens of Coleocephalocereus goebelianus defy expectations by branching from cephalia and only from cephalia. By contrast, when most other cephalium-bearing cacti branch, it is from photosynthetic parts, with the regularly accepted notion that cephalia cannot branch because (1) this would put too much mechanical strain on the stems and (2) areoles in cephalia have determinate growth, i.e. are no longer active.

Stephanocereus leucostele and other cacti with ringed-cephalia, however, show that Coleocephalocereus may not be as unique as usually thought because S. leucostele and Arrojadoa species usually only branch from cephalia. While this may not be maladaptive (pardon the double negative), it is also not obviously adaptive.



President's Message

The Gardeners' Spring Fair in Green Valley was excellent. We had great speakers, superb vendors and a beautiful day. The Green Valley Gardeners are a wonderful group to work with. This was our second such event. The Green Valley residents are really interested to learn more about cacti and other succulents and so the focus of this event really fits our education mission. Thanks to all who help put this together

April 14th is our newly revamped Expo at Pima Prickly Park. We need your help and participation in this event.

Check out the information in this newsletter about the Expo. Please bring your friends and neighbors to the park and especially children. There will be a lot to see and do and free Prickly Pear Snow Cones. It doesn't get better than that.

Also at the Expo will be the final bids on the 8 colored prints by Lucretia Hamilton. You can view them at this month's meeting and also at the Expo. All proceeds go to the Sonoran Desert Florilegium Project. This is a once in a lifetime opportunity to own one or more of these special illustrations. More information will be at our regular meeting.

April 21st is a special limited botanical tour of the Ruby Road area. Details are in this newsletter and the numbers are limited. You will be able to see in habitat some very special cactus and succulents. Our Board Member, Rob Romero will be your guide.

Saturday, April 27 is the TCSS Garden Tour from 8:00 am to 3:00 pm. This is a don't miss event. Our members open up their yards to us and this is a great opportunity to see wonderful plants and gardens plus get some great ideas to apply to our own yards.

We finish up this busy time with a Cactus Rescue Plant Sale at our Amphi Holding Site on Saturday morning May 4 from 8:00 am to 11:00 am. There will be a lot of saguaros, hedgehogs and barrels. A great time to plant and replace those winter mishaps.

There will also be several rescues during this period and as always notification will be on Thursdays.

Join us at our regular meetings for great speakers, great food and great friends.

Finally, I want to send a special welcome to our youngest member Naheli Cabezas, born March 18 to our members Cathy and Elias (my daughter and son-in-law).

Thank you for your support.

Dick Wiedhopf, President

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery-plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It" table and one of our fabulous members will identify it.

Ruby Road Field Trip

Our April 21st field trip to the Ruby Road is confirmed. Cost will be $20 per person. Space will be limited to 20 people on a first come first served basis. Send your payment directly to TCSS Field Trip, PO Box 6575, Tucson, AZ 85728-4759. Payments will be put into the order they are received for the first 20. We will have bottled water available but please bring your own lunch, snacks, etc. We will be meeting in the Walmart parking lot on Valencia west of I-19 at 9:30am. Departure will be at 10am and we anticipate a return time of around 3pm. As always, bring hats, sunscreen, cameras and let's have a good time!

Monthly Meeting Refreshments

Each month we are fortunate to have a gourmet spread of good things to eat and drink at our TCSS meetings. Many generous members contribute a variety of interesting and delicious treats for all of us to enjoy.

In the newsletter each month there is a note telling members whose last names begin with certain letters that it is their turn to bring something to share. The refreshment committee also has a budget to bring some basic food and drink to assure that we are all well fed. Kudos to Marija and Rim Tallat-Kelpsa for making and bringing our signature prickly pear lemonade for the meetings (and to members Joyce and James Thomas and Sue Hildreth for contributing their prickly pear fruit harvest that makes the punch so special)

Please remember to check the newsletter each month to see whose turn it is to bring something to share with your fellow members, and thanks again for all of the delicious treats. If you have any questions or comments, please contact Patsy through the TCSS phone #256-2447.

April Refreshments

Those with family names beginning with I, J, K, L, M, N, and O please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed! the meeting. Your generous sharing will be greatly appreciated and enjoyed!

TCSS Program Presentation
Thursday, May 2, 2013
"The long-term monitoring study of *Echinocactus horizontahalonious var. nicholii*"
Presented by Margrit Macintosh

Growing in the Desert Series – April 2013

Echinocereus pentalophus – Common but Extraordinary

By Mark Dimmitt

Echinocereus pentalophus (alicoche, lady finger cactus), has been in cultivation for a long time, but it is one of the finest cacti available. It is easy and vigorous, completely hardy in southern Arizona deserts, and has one of the most beautiful flowers in the cactus family (Figure 1, Figure 2).

The species ranges from extreme southern Texas well into northeastern Mexico. The plants are rather variable in stem form. They range from about a half-inch to over an inch thick, with four to eight ribs. The thin-stemmed forms creep horizontally across the ground, while some with thicker stems will grow erect for almost a foot before drooping.

Plants will burn in full desert sun. Grow them in filtered sun beneath desert trees or shrubs (or under 30-50% shade cloth), either in the ground or in pots. The stems root as they creep, and some clones are stoloniferous. Therefore the best specimens will develop in wide, shallow pots or flats. Stems that grow beyond the pot will hang down for two feet or more (Figure 3). Once the plants sprawl over the pot, they become difficult to repot. The easiest solution is simply to start over with a few cuttings in a new pot. They are so vigorous that a new specimen will develop in just two or three years.

Flowers bloom for about two weeks in April, with mass bloom occurring only a few days. The season is short, but a big plant with dozens of flowers is memorable, and you'll eagerly await the next year's spectacle (Figure 3, Figure 4). So don't neglect this wonderful species just because it's an oldie.

Figure 1. The flower of Echinocereus pentalophus is over three inches across, opening flat to reveal concentric circles of bright color.

Figure 2. Alicoche flowers are often borne several to a stem.

Figure 3 and Figure 4. For a few days a year alicoche plants will bear a dozen or more open flowers at once, creating a dazzling display.

My Prickly Friends

Cylindropuntia arbuscula

Family: Cactaceae
Genus: Cylindropuntia
Species: arbuscula (Engelmann) F. M. Knuth
Common Name: Pencil Cholla, Bush Cholla

Habitat: Found in sandy or gravelly desert soils of low washes, flats and grasslands from around 1,000 to 3,500 feet elevation.

Range: This species is found within Maricopa, Pinal, Pima, Yavapai, Santa Cruz and Cochise counties in Arizona. It is also found south of the United States within Sonora and extends further into Sinaloa, Mexico.

Description: Easily identified from other native chollas and so called “pencil chollas” by the somewhat yellowish green stem color and smooth surface. The further spaced sheath covered golden or dirty yellow spines can be quite distinctive. Some variations in spines can be confusing as this species is also seen with only a few large spines or none at all. Plants grow from a single trunk.

Size: Rather large mature plants can be found growing to over 7 feet tall and up to 8 feet wide. In cultivation, very nice size plants should be expected and it may be a good idea to allow adequate space before planting. One particularly old plant was discovered south of Tucson, growing within several old mesquite trees, and was around 9 feet tall.

Shape: Cylindrical Stem/Jointed

Flowers: The flower color may be greenish yellow or sometimes it may also show a light reddish brown tint and with lots of sun the flower will show more yellow and a rather copper color at the edges of the outer perianths. The fruit does not invite one to enjoy having it for a dessert treat. Fruits are usually green or yellow green in color although on some plants it may also have a slight reddish appearance. The fruit may be present on the plant for quite some time and it is not a select choice for birds.

Propagation: Plants may be grown from seed but this cholla will take root easily by removal of the numerous joint stems. Remember that new plants grown from stem cuttings will produce an exact match to the parent plant and this can help in selecting an especially choice species variety or form that should always be preserved.

Care: This Cylindropuntia can be easily grown as a landscape cholla. It is not a prolific growing species and is known to be rather slow. It can be coaxed into growth and will appear more robust with extra water and fertilizer during the hot summer, but this plant is a true desert dweller that can easily do without any extra care. This cholla loves full sun so be sure it is well provided in a landscape setting. Plants grown in low light surroundings tend to produce fewer stems and they may also be extended in length and less productive with flowers, fruit, etc. The pencil cholla can survive in well drained native soils and really needs very little extra effort by the grower.

Comments: Arbuscula (like a small tree) is a rather slow growing cholla that can add a bit of needed variety to any desert landscape. It does hybridize with Cylindropuntia leptocaulis as well as other cholla species within its range, although those plants may not be easily detected. This plant produces a number of gold colored spine sheaths (thin spine covers) that are easily found on newer growth. It can be somewhat hard to find in some nurseries and garden centers so if you want one be sure to call for availability. Many of us can well appreciate our native chollas and if you are looking to add a multitude of pencils to your home, don’t forget Cylindropuntia arbuscula, a prickly friend indeed.

2013 TCSS SPRING DESERT GARDEN TOUR

Saturday - APRIL 27th - 9am to 3pm

This Spring's Member Garden Tour explores five intimate and eclectic member gardens in central Tucson. Mostly clustered in the historic neighborhoods near the University campus, these landscapes illustrate innovative solutions for

showcasing cactus and succulent collections. You will have the opportunity to tour a lush landscape created with the help of wandering water harvesting design elements... a desert lover's special collection of mature specimens... a dense landscape of artistically arranged cacti, succulents paired with other special plants under the canopies of large mesquites... and, a well established double lot desert theme garden with a newly designed area devoted to raised

bed vegetable gardening, grape arbors and fruit trees. Then, driving further east, you will see a landscape in transition from water intensive grass-focused landscaping to areas exhibiting the owner's newly acquired fondness for cactus, succulents and other low water use vegetation. It is here that you will also get special instructions on how to make "hypertufa" pots for your own potted collection of plants.

The tour is open to all TCSS members and their guests at no charge. We hope that you will be able to take advantage of this special opportunity to see these desert gardens. TCSS is especially grateful to the generous garden owners who have agreed to share their personal landscapes with our membership. We are also including information to do your own self-guided tour of the historic Krutch Garden on the UofA campus

Please check our website www.tucsoncactus.org after April 1st for detailed information and photos on each of the five member gardens that are on this tour.

TCSS 2013 SPRING DESERT GARDEN TOUR

A: - Wendell and Rosemary
B: - David
C: Margaret and Norm
D: Michael and Linda
E: Jennifer

Optional stop: self guided tour of the Joseph Wood Krutch Garden on UofA Campus Mall

DRIVING DIRECTIONS

Look for our TCSS Boxes with Green Streamers to help you find the homes

Note: Names and Addresses removed after the tour for security reasons.

NOTE: If you would like to see the historic JOSEPH WOOD KRUTCH GARDEN while you are near the UofA, you could just continue going west on 3rd Street when you leave the Yetman garden and cross over Campbell onto the campus. Drive down the mall until you reach Cherry, turn left and go south a short distance to the Cherry Avenue Visitor's Garage. (No charge on Saturday). Park and walk back to the grass mall, turn left and walk to the garden located on the mall near the Administration building. A few years ago TCSS donated several native rescue plants to the garden.

Spring Garden Tour

April 27, 2013 9 AM to 3 PM

Tucson Cactus and Succulent Society

For TCSS Members and their Guests

Note: The Optional location is the Krutch Garden on the U of A campus. You can park in the Cherry Ave. garage (no parking fee on Saturday) and walk about 2 blocks to the garden on the grass mall across from the Admin. Bldg.

(Optional) JOSEPH WOOD KRUTCH CACTUS GARDEN

When the University of Arizona was founded as a land grant institute in 1891, botanist Dr. James Tourney saw the value of Sonoran desert plants and started a display cactus garden which today is known as Joseph Wood Krutch Garden and is located in the center strip of the grassy green UA Mall across from the Student Union. The garden is packed with interesting Sonoran specimens including a giant Boojum.

The Krutch Cactus Garden is an optional self guided offering during the TCSS Spring Desert Garden Tour. Parking is free on Saturday in the nearby Cherry Avenue Parking Garage (see information with the driving directions). One might even decide to wander the campus and take the self-guided Arboretum tree tour.

More information on the Cactus Garden, a list of plants and to print the map: http://arboretum.arizona.edu/krutch-garden
More information with a list of trees and to print the self guided Arboretum tour: http://arboretum.arizona.edu/

Spring Tour 2013

TCSS at SARSEF 2013

First Place Winners

Second Place Winners

Third Place Winners

Again this year TCSS participated in the Southern Arizona Rsearch, Science and Engineering Fair (SARSEF). TCSS idetifies those projects directly related to cactus or succulents, evaluates those projects and confers our own awards in conjunction with the overall SARSEF awards process. Thanks to our judging panel – Jessie Byrd, Norm Dennnis, Dawn Hanby and Dawne Scarlett – for participating. It was a bit disappointing this year, in that there were only 7 cactus related projects out of over 1800 projects. We awarded our First Place Award to a pair of High School students whose project was "Prickly Pathogens II". This was a follow-on project from the last 2 years looking at pathogens found on various cactus spines. This year, one of the focus points was the difference between urban cacti and non-urban cacti (the urban had more pathogens). We awarded two Second Place Awards – both to second graders. One was titled "Which Cactus In The Sonoran Desert Has The Most Water? and the other was "When A Cactus Absorbs A Lot Of Water Does It ever Explode?". Our Third Place Award went to a Fourth Grader for "Why Don't Cacti Dry Up In The Desert Sun?". (Yea I know, if there was a tie for second there shouldn't be a third place – but the goal here is to incentivize the students with an interest in science)

FROM THE FLORILEGIUM

The most vibrantly colored wildflower of the Sonoran Desert is often missing from spring wildflower blooms. *Calochortus kennedyi*, the perennial mariposa lily, can remain dormant for years waiting for enough winter rain to soak the ground to the depth of the bulb, or corm. When conditions are right, its vermillion color creates spectacular displays. At higher elevations the brilliant red-orange color is replaced by a yellow form of the flower.

The mariposa lily, named for the Spanish word for butterfly, can be found in deserts, grasslands and semi-arid woodlands from southern Nevada to northern Sonora. It currently has protected native plant status.

These two portraits of the desert mariposa clearly illustrate the major structures of the flower, most notably the hairy purplish-black spots in the center of the 3-petaled flower. These spots are nectaries which are surrounded by the fringed membrane and attached to the base of each of the orange petals. The female structure, or pistil, rises from the center of the flower with its three-lobed stigma at the top. Purple anthers, the male structures containing pollen, can be seen surrounding the pistil.

The Artists:
Lynn Reves teaches watercolor, colored pencil and mixed media at the Desert Botanical Garden and is president of the Southwest Society of Botanical Artists. One of several artists illustrating rare and endangered plants of the Grand Canyon, Lynn is also contributing illustrations to the Legumes of Arizona project. Her painting of *Calochortus kennedyi* is currently on exhibit in *Portraits of Nature* which runs through March 30 at ASU Library's Polytechnic Campus.

Margaret Pope teaches botanical art at the Arizona-Sonora Desert Museum and chairs the steering committee of the Sonoran Desert Florilegium Program, a program established to preserve and promote botanical art of the Sonoran Desert Region. The Mariposa Lily shown here is one of many of her wildflower drawings that were commissioned by the Arizona Native Plant Society for their poster, *Sonoran Desert Wildflowers*.

Additional works by these two artists can be seen on the Illustrations Index page of the Florilegium Program's website (www.sonorandesertflorilegium.org).

Calochortus kennedyi,
Desert Mariposa Lily
© Lynn Reves 2011
Watercolor

Mariposa Lily, Calochortus kennedyi
© Margaret Pope 2000
Colored Pencil

You're Invited - Pima Prickly Park Expo and Park Celebration Event

3500 West River Road
Sunday, April 14, 2013 - 9 AM to 3 PM

Free and Open to the Public

Pima Prickly Park is an educational joint venture between Pima County Natural Resources, Parks and Recreation and the Tucson Cactus and Succulent Society.

Event attendees will be able to purchase cactus and succulents from many different Tucson growers, sample and purchase related cactus products, learn about wildlife, plants, desert ecology and enjoy the Pima Prickly Park flora and fauna.

Events and Activities to Include: (all from 9 AM to 3 PM unless otherwise noted)

- Cactus and Succulent Plant Sales , about ten Tucson area growers
- TCSS Rescued Cactus Sale of Saguaros (up to 30" tall), golden Hedgehogs and Mammillaria (10 AM to noon, limits for first half hour, two per customer)
- Exhibits featuring desert plants and animals
- "Let's Build a Cactus Model" children's activity
- See beautiful illustrations and learn about Botanical Art
- Planting activity, plant a small cactus to take home or plant in the park
- Vendor sales of cactus products, some give free samples
- Park overview presentations (10 AM to 2 PM)
- Guided park tours following presentations
- Visit our Hoop House (shaded propagation structure) to see what's growing to go into the park
- Free Prickly Pear SnoCones

The Park is located at 3500 W. River Road, on the North side of River Road, about 3 miles west of Oracle Road and before River Roads turns North to intersect with Orange Grove at Thornydale.

For more Information, TCSS cell (520) 256-2447
web: www.PimaPricklyPark.org
email: TCSS @ TucsonCactus.org

NRPR

TUCSON CACTUS AND SUCCULENT SOCIETY
HASAÑ BAHIDAJ

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Cactus@TucsonCactus.org

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trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, April 18, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

April Refreshments
Those with family names beginning with I, J, K, L, M, N, and O please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed! the meeting. Your generous sharing will be greatly appreciated and enjoyed!

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

April 2013

Thursday, April 4, 2013 7:00pm
Monthly Meeting, "Odd plants in odd places: Why an evolutionary and ecological theorist studies the natural history of cactus and succulents" Presented by Root Gorelick

Friday, April 5 - April 7, 2013
Central Arizona Cactus and Succulent Society Show and Sale at The Desert Botanical Garden, expect to see amazing, beautiful and bizarre examples of cacti and succulents as members of the Central Arizona Cactus and Succulent Society display potted specimens of desert plants from around the world.

Tuesday, April 9, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

Sunday April 14, 9 am - 3 pm, 2013
TCSS Expo-Pima Prickly Park Celebration. TCSS Member Business Plant Sales including Rescued Cacti (10 - noon) and Educational Exhibitors.

Saturday April 27, 9 am - 3 pm, 2013
Desert Garden Tour for TCSS Members and Guests in the Central Tucson area

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.

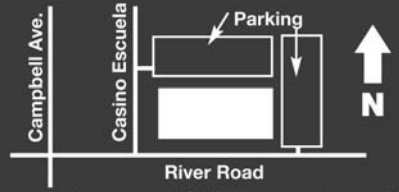
General Fund (unrestricted)
Dean & Jenny Brick

Education
Roger Watson

Pima Prickly Park
K Tsiani Lomawaima

Scott Calhoun
Karen Topham & Family
Dawn Hanby
Geno DeCarlo
Diane Strzesak

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society May 2013

Thursday, May 2, 2013 at 7:00 PM

"The long-term monitoring study of Echinocactus horizontahalonious var. nicholii"

Presented by Margrit McIntosh

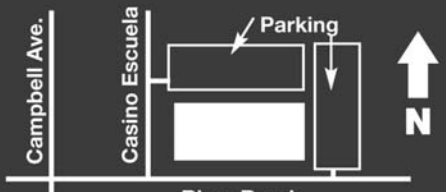
This program is about the long-term monitoring study of this one variety of Echinocactus that is native to only one small area of southern Arizona.

Margrit McIntosh grew up in Manhattan, spent many summers in the Berkshires of Massachusetts, and was a frequent visitor to the American Museum of Natural History in her young years. She has had a varied career and has a background in English Literature and Library Science. She received a Ph.D. in Ecology and Evolutionary Biology from the University of Arizona in 2001, and her dissertation was on the reproduction of barrel cacti, and the behavior of native solitary bees that specialize on cacti. Since graduating she has remained in Tucson working for the University as a web designer and programmer, while continuing to study cacti and cactus bees in her spare time.

Be sure to attend this special presentation and find out how and why these special studies can make a difference. Invite your friends, enjoy some great food, get a free plant and join the multitude of others in our organization who love to talk about cactus and succulents.

TCSS Program Presentation
Thursday, June 6, 2013
Hedgehog Heaven, the diverse Echinocereus of OroGrande.
Presented by Rob Romero

Meetings are held on the first Thursday of each month.



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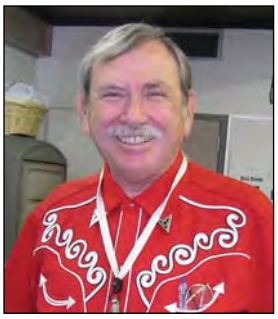


President's Message

SONORAN X is less than a year away and it is time to start planning for it. We have the good fortune of living and breathing the Sonoran Desert over the last 19 years. A lot has been learned and shared with participants in this biennial event. As many of you know it is an outgrowth of the 1995 CSSA convention that we hosted in Tucson. There was a group of members skilled in putting on conferences and couldn't let that talent go to waste.

We have been experiencing climate variances that have shocked many of the plants we grow and perhaps changed how and what succulents and cacti we will grow in the future. Some of the plants that have become winners in Tucson are Trichocereus Hybrids, Adenium Hybrids, Echinocereus species and even Hechtia and Dyckia Hybrids.

I would like to focus SONORAN X on these plants and perhaps a few others under a general title of "Plants for the Sonoran Desert Hobbyist". A two day focus on all aspects of growing these plants would be great.

Our Vendors will have a field day in providing great specimens of these plants and this would bring in a lot of interested buyers. The end of April will be a perfect time (I hope) for a lot of these plants to be at their best.

There will be some great workshops and speakers on these subjects. Many of these are already well known to us and we will bring together many new ones. This will be our biggest and best conference spanning the last 20 years.

A list of committees will be circulated at the meeting and placed on our website. An initial planning meeting will be held in the next month or so. There will be a lot going on at Sonoran X and your help and participation is needed and appreciated.

The dates for the Sonoran X Conference are Thursday, April 24 thru Sunday, April 27, 2014 at the Inn Suites Civic Center (same location as previous).

Thank you for your support.

Dick Wiedhopf, President

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It" table and one of our fabulous members will identify it.

Ruby Road Trip

Well, our Ruby Road field trip was a great success. We had 20 attendees and got to see many of the unique plants of that region. The weather could not have been better and all went very smoothly. A partial list of what we saw: Coryphantha recurvata , Mammillaria macdougalii, Agave parviflora, schottii and palmeri, Mammillaria grahamii, Graptopetalum bartramii, Yucca schottii and assorted Opuntia species. We will be planning another day trip soon, with information to follow.

May Meeting Refreshments

Those with family names beginning with P, Q, R, S, T, U, and V please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed! Your generous sharing will be greatly appreciated and enjoyed!

My Prickly Friends

Cylindropuntia bigelovii

Family: Cactaceae
Genus: Cylindropuntia
Species: bigelovii (Engelmann) F. M. Knuth
Common Name: Teddy-Bear Cholla, Bigelow Cholla, Golden Spined Cholla, Jumping Cholla

Habitat: This excellent desert cholla is found from sea level to about 3,000 feet elevation in sandy soils to rocky desert bajadas and hillsides.

Range: In Arizona the plant is found within Yuma, Pima, Pinal, Gila, Maricopa and Mohave counties and smaller populations may occur in other areas. In California it inhabits Imperial, Riverside, San Diego and San Bernadino counties, also in Mexico it is found in the northern parts of Baja California and northwest Sonora.

Description: The joints of this cholla are usually about 2 to more than 10 inches in length. They are green to somewhat bluish green in color and equipped with straight, formidable and densely barbed spines .25 to 1 inch in length. This is the cholla that everyone wants to hug... not really! The Teddy-Bear Cholla as the locals call it is a very beautiful white, light golden or straw colored plant typical because of the distinct spine color and appearance. Don't be fooled as the spines of this plant are some of the most vicious among all the chollas.

Size: Rather large mature plants can be found growing to around 7 feet or more in height and up to about 4 feet wide.

Shape: Cylindrical Stem/Jointed

Flowers: Flowering usually begins in April and the color may appear almost white to pale yellow/green with the center of the flower displaying a nice green tint. The flower size is rather small usually about 1 to 1.5 inches in width. The fruit is green until changing to yellow and eventually drying and dropping to the ground.

Propagation: From the easily detachable stem segments

Care: Teddy-bear cholla is an easy plant to grow in a desert landscape or near areas where you need added protection from intruders. It is best suited where it will receive full sun, making it an excellent cholla for adding beauty to the landscape. It is not a vigorous plant to grow but the stems root very easily and with a little extra water during the drier months of the year it will slowly grow into a nice robust plant.

Comments: This cholla may not be the most desirable for those with children or pets but in a garden setting surrounded by other plants it can make a beautiful, safe addition. Be cautious and just watch your step around this very beautiful Arizona native. The easily detachable stems may lay on the ground or can be easily scattered into a path. They can then touch the unsuspecting victim and impale the skin. The actual spine is hidden under a very light, white or golden sheath that covers it. The spines underneath those sheaths are heavily barbed and can inflict a serious wound if they happen to penetrate the skin. A large comb or other tool may be necessary to remove it, and the procedure can be very painful! Because of the numerous spines, the actual green stem segment can sometimes be unrecognizable. Older plants are skirted by stems covered with very dark brown or black spines and the trunk carries this appearance as well. Another species, *Cylindropuntia ciribe* is found in Baja California Sur and is quite similar to *Cylindropuntia bigelovii* but has other obvious unrelated characteristics. A final comment and a good suggestion may be, anyone needing a good hug should have a Teddy-Bear cholla friend within reach.

FROM THE FLORILEGIUM

The Sonoran Desert's ironwood, Olneya tesota, was first described in 1854 by Asa Gray in his Plantae Novae Thurberianae. The new genus was named after Gray's friend and colleague, Stephen Thayer Olney, a Rhode Island botanist. According to George Thurber, who collected the plant during the U.S.-Mexico Boundary Survey, tesota was the Mexican name for the tree.

These two illustrations of ironwood, separated by more than 150 years, show how the artists' exquisite attention to detail can take the illustrations well beyond scientific description to create beautiful works of art. In the colored pencil drawing the flowering branches have become nearly leafless as the spring buds appear. The lithograph concentrates on the subsequent fruiting branch along with enlargements and dissections of the flower. Both works are meticulous in illustrating botanically accurate phases of development, but they do so in an artistically elegant way.

Margaret Pope's colored pencil drawing was one of several plant portraits commissioned by the Tucson Botanical Gardens and exhibited there in 2011. The lithograph from 1856 was one of the illustrations which accompanied John Torrey's botanical reports for the Pacific Railroad Survey Report (Vol. VII, Lt. John Parke's expedition). As was too often the case, the artist is not credited in the report but was likely one of the illustrators working for Torrey and Gray, who prepared botanical reports for most of the government surveys of the time.

Botanical illustrations from the mid-19th and early 20th centuries as well as contemporary illustrations will be presented in the Florilegium's exhibit Botanical Art of the Sonoran Desert: Past and Present which will be shown in the Ironwood Gallery at the Arizona-Sonora Desert Museum from August 24 through October 27, 2013.

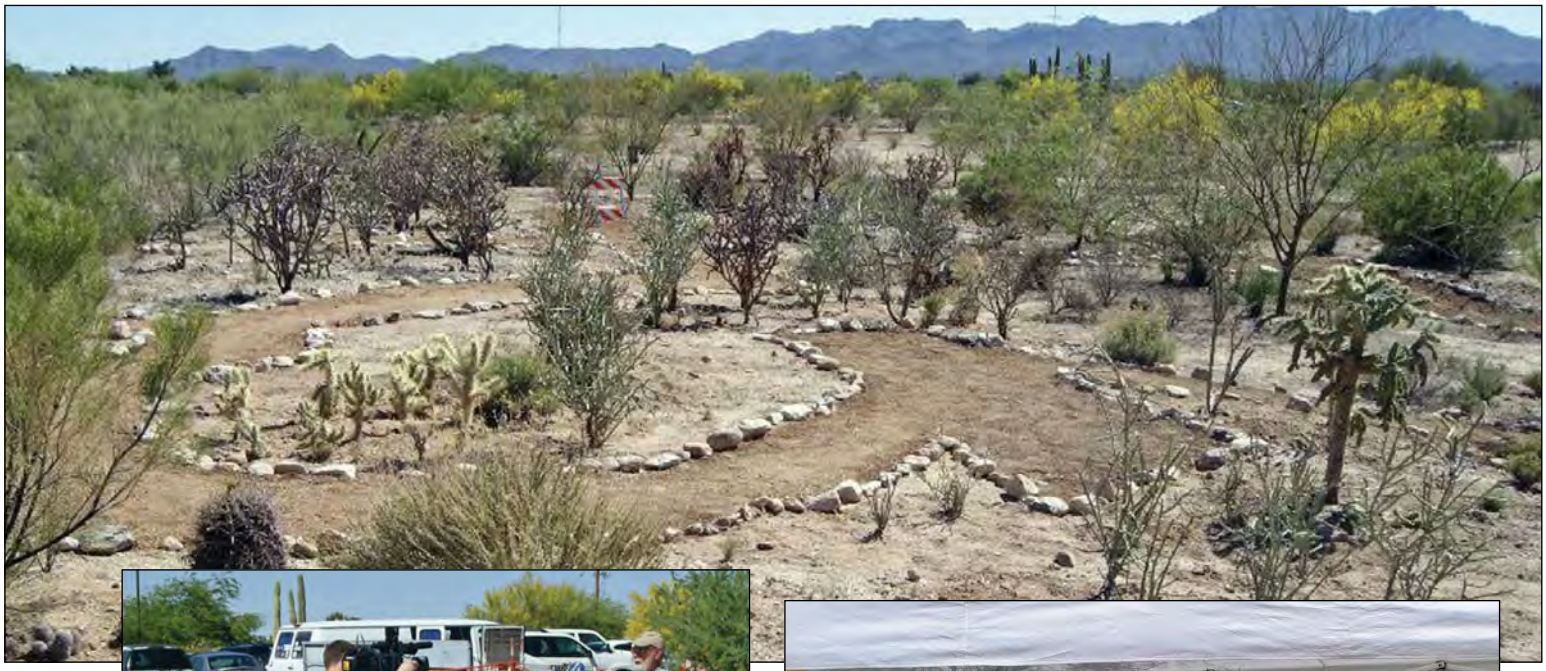
Many more exceptional illustrations from government survey reports (1846-1855) can be seen at the Florilegium's website in the Historical Illustrations section at: www.sonorandesertflorilegium.org.

Olneya tesota, Ironwood
© Margaret Pope 2011
Colored Pencil

Olneya tesota
Artist Not Credited
Lithograph for Vol. VII, Reports of explorations and surveys, to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean, 1856

Pima Prickly Park Expo and Park Celebration

Photos by John Durham



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Dale Johnson

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Bill Holcombe *(2013)*

Cactus Rescue
Cactus@TucsonCactus.org

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Education: Caryl Jones • caryljones13@mac.com
Free Plants: Donna Ellis • donna.ellis@mindspring.com
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trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, May 23, 2013

TCSS Web Page:
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TCSS Spring Rescued Cactus Sale

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Board meeting at the U of A College of Pharmacy

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Elvira Burruel
Arnold & Barbara Fuller

Education
Jeff Timan

Unrestricted General Fund
Paul & Jennifer Butler

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society June 2013

Thursday, June 6, 2013 at 7:00 PM

"Hedgehog Heaven, the diverse Echinocereus of OroGrande"

Presented by Rob Romero

The Jarilla Mountains near OroGrande, New Mexico are a special place indeed. A quite unassuming little range but the cacti within are quite spectacular. There are a few species of Echinocereus (hedgehog cacti) that grow here and they hybridize to create some incredible flowers of varying shapes and colors. In 2010, there had been good winter moisture in this region so the plants really put on quite a show.

Rob Romero has been a hobbyist cactus grower for about 20 years after a chance visit to the New Mexico C&SS show and sale in 1991. There he met Steven Brack of Mesa Garden and was officially bitten by the cactus bug. Originally from New Mexico, Rob moved to Tucson in 1998. In addition to growing cacti, Rob takes several trips a year to see the plants in habitat. His first visit to OroGrande was in 1992 and he kept going every year up until 2010. The program will focus on the 2010 trip and will show many different flowering plants to highlight the diversity of the population.

This will be an excellent program that everyone should really enjoy so please bring your friends. There will be lots of great snacks, food and more. We will have an excellent selection of raffle plants and you will even get a nice free plant to take home.

June Meeting Refreshments

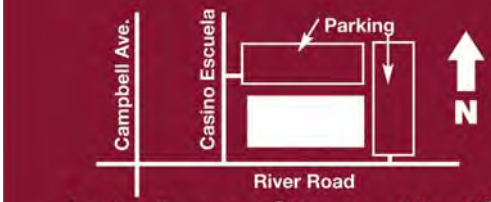
Those with family names beginning with D, E, F, G, H, I, and J please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

TCSS Program Presentation
Tuesday, July 2, 2013

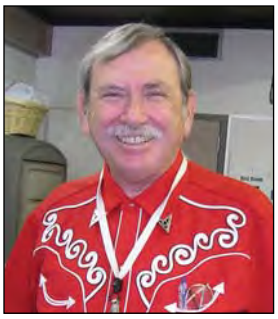
Crossing the Andes: Cactus and Succulents of Chile and Argentina

Presented By Guillermo Rivera

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road



President's Message

I would first like to talk about SEEDS. We have neglected the importance of collecting and preserving the most important part of our hobby. Seeds are the starting point. As some of the older collections of plants die off we need to make sure that we are maintaining these collections by growing new plants mostly from seeds.

Collecting seeds is fun. Many of you probably neglect this part of the hobby thinking that you don't like to grow plants from seed and who would want your seeds anyway. Wrong!

There are more than a thousand member in our society and many enjoy growing plants from seed. We need to be more serious about this whole issue from pollinating, collecting, cleaning, identifying and sharing seeds from our collections.

I have some thoughts about what we should be doing to preserve common and rare plants. Several years ago we tried to set up a dating service for those plants that need to be pollinated by another member of the same species. We were successful in pollinating *Yucca endlichiana* and produced more than 100 seeds. These were germinated by one of our nursery members and now are part of 100 hobbyist's collections. Many plants are either male or female and need this service. We need to find a way to bring these plants together, especially the rarer plants, without ownership & location problems. Some plants are self-sterile and it may be convenient to loan your plant to an experienced growing who also has this plant so that both plants can be pollinated and produce seeds. The whole area of pollination and cross-pollination is a subject that we need to address.

Many of our cacti and succulents produce seeds without our help and are great fun to collect and grow. I have a whole bunch of kitchen tools that I use to clean seeds. I like to scoop out the seed mass and use a small high speed mixer to break up the seeds from the matrix. This works great on small hard cactus seeds. A tea strainer is great to separate small seeds from junk. Water is the most important tool. I am one who believes if the seed sinks than its good and I can decant the rest and throw away. I put the good seed on a folded paper towel to dry overnight. There is a lot more to talk about.

For seed pods that open on plants to allow their seeds to be scattered (aloes, adeniums, dyckias etc) I use organza bags (those draw string bags you get at weddings etc) to cover the pods. They come in all sizes and are reusable. The seeds are trapped in the bags and protected from predators and easily retrieved. Use small envelopes to document the seeds and store them in a cool protected place. Bring some to a meeting to share.

Growing cactus and succulents from seed is another great educational topic.

June 1, 2013 Joe Frannea will step down again as treasurer and turn over the books to Board Member Linda Bartlett. The balance of Linda's term on the board will be completed by Joe. This has all been approved by the Board of Directors. The whole society appreciates the great effort that Joe has provided. Thank you Joe!!

And thank you Linda for taking on this responsibility.

Don't forget to attend the special speaker event on June 14, at 7:00 pm. Check out the article in this newsletter. If you like aloes this is a must. Everyone is invited. Thanks to Arid Lands Greenhouses for bringing Len Newton to speak.

Thank you for your support.

Dick Wiedhopf, President

Friday, June 14, 2013, 7:00 PM at the Junior League of Tucson, 2099 East River Road.

A Very Special Program Presentation Sponsored by Arid Lands Greenhouses

"An Aloe Miscellany"

Presented by Len Newton

Len's program will feature the Aloes he has named and Aloes named by others with interesting stories, primarily from West and East Africa. His program will be quite autobiographical in content and reflect his long career as a botanist interested in succulent plants from Africa.A movie by Gordon Rowley will also be shown. Gordon was the President of the British Cactus and Succulent Society, 1983 to 2003. The film is autobiographical and made for Gordon's 90th birthday party several years ago. The movie really covers much of the mid-20th century of cactus collecting in England and some of the more colorful characters involved, including Rowley himself (as well as Len Newton).

Len Newton

Highly censored biographical note.
Born in England a long time ago at the age of 0. Interested in living things at an early age, but too lazy to run after animals so became a botanist. Became interested in succulent plants whilst at secondary school, so studied botany at the university, eventually gaining his PhD on biosystematics of some tropical aloes. Since then I have persuaded several institutions to pay me a salary for continuing my schoolboy hobby, under the guise of being a botanist. After teaching in England for several years, went to Kumasi University in Ghana. Went to Ghana on a two-year contract as a Lecturer in Botany, and left 18 years later as a Professor. Returned to England to take up a Fellowship in the Botany Department of the Natural History Museum, in London, but after one year came to Kenya, as a Professor at Kenyatta University. Also an Honorary Associate at the Royal Botanic Gardens, Kew (UK). Main research interests are taxonomy, ethnobotany and anthecology. Have carried out field work in many countries, including Kenya, Tanzania, Djibouti and Yemen, and have described about 60 new species. President of the International Organisation for Succulent Plant Study (IOS) from 2006 to 2012.

The TCSS will be hosting this special program, so please mark your calendar and be sure to attend! Everyone is invited so please come, meet Len Newton and enjoy the evening.

Growing in the Desert Series:
Coir (Coconut Husk Fiber): A Universal Potting Medium?

by Mark Dimmitt

What is coir?

Coir (pronounced "koyer") is the fiber from the husk of the coconut, the part between the hard inner shell and the outer coat. It has long been used to make doormats, mattress and upholstery stuffing, rope, and fishing nets. But mainly it is a waste product of the coconut industry; mountains of the stuff have accumulated in tropical countries where coconut palms abound.

Coir has been used in the USA as a potting medium for a variety of plants for at least two decades, especially in Florida. Until recently its availability has been undependable and the quality highly variable. These problems have been solved, but few horticulturists are aware of recent developments.

Dispelling coir's bad rap

1. *Coir is soggy muck that drowns plants*. Until a few years ago the main coir product sold in the USA was "cocopeat", a fine dust that looks much like horticultural peat moss (Figure 1). This product holds even more water than peat, and because of its fine texture, it remains saturated for days after irrigation. I have tried it, and even when mixed 1:3 cocopeat:pumice or perlite, it killed nearly every plant that requires good drainage. This stuff is indeed deadly.

The product discussed in this article consists of fiber and small chips, with almost no dust (Figure 2). Even when it's saturated, it contains abundant air pockets and therefore roots will not suffocate.

2. *Coir is dangerously salty.* Coir used to be washed in seawater, and was therefore quite toxic to most plants. It had to be thoroughly leached before use, especially the larger chunks used for growing orchids. Modern coir processed for horticultural use has been fresh water washed, and is very low in salt. Tucson tapwater is five times more salty than today's coir.

3. *Coir comes in hard bales that must be laboriously broken up by hand.* Cocopeat was usually sold in compressed bales. The bales were very difficult to moisten, and even after soaking for several days they had to be physically broken up. This was difficult and time-consuming. The newer fiber and chip products often come in compressed blocks of one-half cubic foot (Figure 3). When a block is submerged in water, it saturates and falls apart in a few minutes, expanding to two cubic feet (15 gallons, Figure 4). It's very easy to use.

My experience with coir

Potting medium is a common topic of discussion whenever and wherever horticulturists gather. A huge variety of ingredients have been used, with varying degrees of success. I've been growing plants since the 1960s, and have spent most of that time experimenting in the hope of finding the ideal medium for my growing conditions and the plants I like. For the past 15 to 20 years most of my media have used peat moss as the primary organic component, amended with different proportions of pumice or perlite for aeration and drainage. (The product is Sunshine Mix, which is about 90% peat with some perlite and pH buffers.) I had good success with these ingredients, but I was never completely satisfied. One of my two main complaints is that the peat retained moisture too long during cool weather, encouraging root rot of sensitive plants. The other complaint is that peat breaks down in a couple of years in our hot climate, so plants needed to be repotted regularly even if they had not filled the pot.

Now I have found a product that thrills me. I discovered good coir in 2008, when I visited Tropica Nursery near Mumbai, India (with Kevin Barber). The nursery covers many acres and produces a wide range of plants, including tropical foliage and flowering plants, succulents, food plants, and orchids (Figure 5). All of them are grown in 100% coir. Owner Dr. Ashish Hansoti has been a pioneer in developing coir as a growing medium. One of his contributions is his research to determine the nutritional needs of plants grown in coir.

I began experimenting with coir when I returned home the same year. After one growing season I was so pleased with the results that I began repotting almost my entire plant collection into coir-based mixes. After four years' experience with it, I have concluded that coir is by far the best all-around organic potting medium that I have ever encountered. Succulents that have performed superbly in media consisting of from 30% to 100% coir include: Adenium, Pachypodium, Plumeria, Aloe, Agave, Sansevieria, Trichocereus, Mammillaria, Stapeliads, Caralluma, Bursera, Boswellia, Fouquieria, Haworthia, terrestrial and epiphytic bromeliads, terrestrial orchids, and some Euphorbia (I have only a few). Nonsucculents have done excellently too, such as citrus, figs, peaches, blackberries, melons, tomatoes, corn, Asclepias, Hibiscus, and many bulbs including Gladiolus, Lachanalia, Scadoxus, Hippeastrum, and Boophone.

I have been using 2/3 to pure coir for tropicals, including tropical succulents such as adeniums. For more xerophytic species I use 25-30% coir, with the rest being perlite and/or pumice. The only plants that have not done well are some extreme xerophytes such as Mohave Desert cacti, Ariocarpus, many mesembs, and Caralluma socotrana. But I have never had much success with these plants in any medium.

Horticultural properties and availability of coir

I have found coir to have numerous advantages over all other organic components of potting media that I have ever used, and few drawbacks. The main ones are summarized in Table 1. The number one best trait is that it has both high water-holding capacity and simultaneously retains plenty of air. This means that it's nearly impossible to overwater most plants during their growing season – you simply cannot suffocate the roots. It is highly resistant to oxidation and microbic breakdown; it lasts at least four years with tropical plants when it's kept continuously moist, and longer for more xerophytic ones. Unlike peat, it does not shrink when dry, and is easy to rewet when it's time to awaken a plant from dormancy. Since I eliminated peat-based media, I have had almost no problem with fungus gnats, although others have reported that these flies can live in coir. In my four years of experience with coir, loss from root rot has fallen to a small fraction of that with peat media. In fact, I have

had almost no root rot of most plants including adeniums, cacti (except extreme xerophytes), aloes, and agaves. Research indicates that coir suppresses the growth of several pathogenic fungi.

Coir lasts two to four times longer than most other organic potting components. In our hot desert climate peat will break down into muck or oxidize to nothing in only a year or two. I have had adeniums in the same pot for four years so far, and the coir is still largely unchanged after all this time of being watered three times a week during the hot season (Figure 5).

Another result I and some others have noticed is that one can grow larger plants in smaller pots. The apparent reason is in the root distribution within the media. With peat-based and other tight media, the roots are concentrated around the inner surface of the pot, especially of clay pots. In coir the roots are abundant throughout the volume of the medium; this is most likely a result of the superior aeration provided by coir (Figure 6).

The disadvantages I've encountered so far are minimal. Small pots (up to about 7 inches) need more frequent watering than in peat-based media. This has not held true for larger pots. Coir is so loose that it exhibits little capillary transport; therefore the center of a mass of it tends to remain moist until roots absorb the water.

Coir is also very low in nutrients. It's even more important than with other media that plants are fed regularly with a complete fertilizer containing all macro- and micronutrients. And because it's organic it has low cation exchange capacity, so cations leach rapidly. For that reason I add a small amount of vermiculite (expanded clay) to provide cation exchange. I also add dolomite limestone to provide the macronutrients calcium and magnesium (or gypsum for plants that need a neutral to acid medium). Plants that have not been repotted into new medium for more than a year get topdressed with gypsum annually. (I do this with all plants in all media; calcium depletion results in root death.)

The best news is that coir is now readily available in several grades of uniform quality, from fine granules for seeds and seedings (this product is much better than the old cocopeat) to large chunks for orchids. Riococo (riococo.com) has eight large production plants in Asia, all with the same equipment that produces identical products that are OMRI-listed (omri.org). These products are distributed by Eco Gro in Tucson, in quantities from single blocks to containers.

My experience so far is anecdotal, although the variety and number of plants I grow is very large. I have just begun controlled experiments to precisely measure the performance of adeniums and several other succulents in coir. Dave Palzkill and hopefully others are doing the same. But I already have enough confidence in this product to wholeheartedly recommend its use for a wide variety of plants. Most will perform superbly in it (Figure 7).

Table 1. Comparison of some common characteristics of coir- and peat-based media.

Trait	Peat-based media (30-50% peat)	Coir-based media (50-100% coir)
Water-holding capacity	Very high	Extremely high
Air content (drainage)	Low to moderate	High, even immediately after saturation
Drying response	shrinks	Does not shrink
Wetting after drying	Hydrophobic; very difficult to rewet	Rewets quickly
Longevity in hot climate	1-2 years	At least 4 years, probably longer
Sustainability	Mined from ancient peat bogs overexploited	renewable
Biological activity	Fungus gnats and water molds thrive in it	Fungus gnats seldom colonize it. Coir suppresses the growth of several pathogenic fungi.
Chemical reaction	Neutral pH	Very acidic (Sunshine Mix is buffered to be slightly acid)

** Acme Sand and Gravel (Tucson) PotB potting blend, a 1:1 mix of compost and 3/8" pumice. It's used by several area nurseries.*

Figure 1. This compressed bale of cocopeat has been out in the Tucson weather for at least five years, and is still largely intact. After days of soaking water has penetrated only a few inches into it, and then it must be broken up by hand. Miserable work! Once wet, it stays saturated for many days. This product is deadly even when mixed with up to three-quarters pumice or perlite.

Figure 2. Closeup view of crushed coir (Riococo's S2 grade), consisting of fiber and small chips. The photo was taken minutes after the sample was saturated. Notice the abundant air spaces among the bits of very wet coir.

Figure 3. Coir is commonly sold as blocks of about a half cubic foot.

Figure 4. When the block in Figure 3 is submerged in water, in about 15 minutes it expands into two cubic feet (15 gallons) of loose product. When packed into pots, it compresses to about 10 gallons in volume.

Figure 5. Tropica Nursery near Mumbai, India, 2008. Among the succulents visible, all grown in nearly 100% coir, are Adenium, Haworthia, Sansevieria, Opuntia, Agave, succulent bromeliads including pineapples, Euphorbia milii hybrids, and Kevin Barber. The health and vigor of these plants stimulated me to try, and quickly to switch to coir.

Figure 6. Adenium 'Arabian Ruby' root ball unpotted after four years in a 10-inch pot of pure coir. The fibers and chips are still largely intact. The plant is four feet tall.

Figure 7. Adenium 'Rainbow', a Hansoti selection, grown for two years in a 15-inch pot of 2/3 coir and 1/3 pumice-perlite. Plants grown in coir exhibit excellent vigor and color.

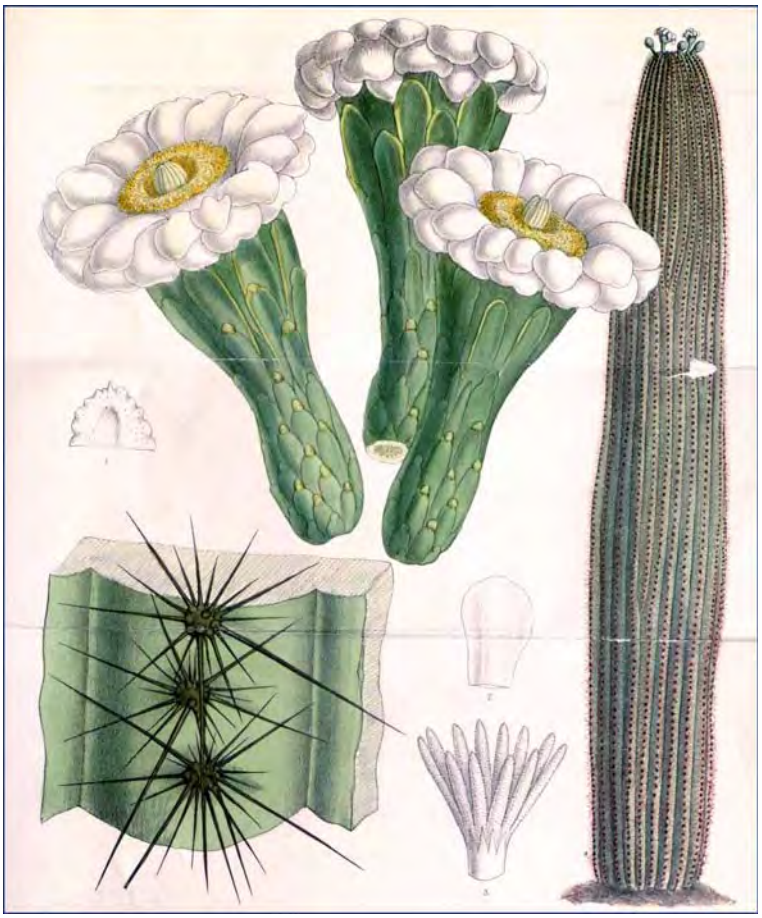
FROM THE FLORILEGIUM

Carnegeia *gigantea* can be a daunting subject for any botanical artist, but for the saguaro's earliest illustrator the singular challenge was never having seen the living plant and having instead to rely on field sketches and shipments of dried and pickled specimens.

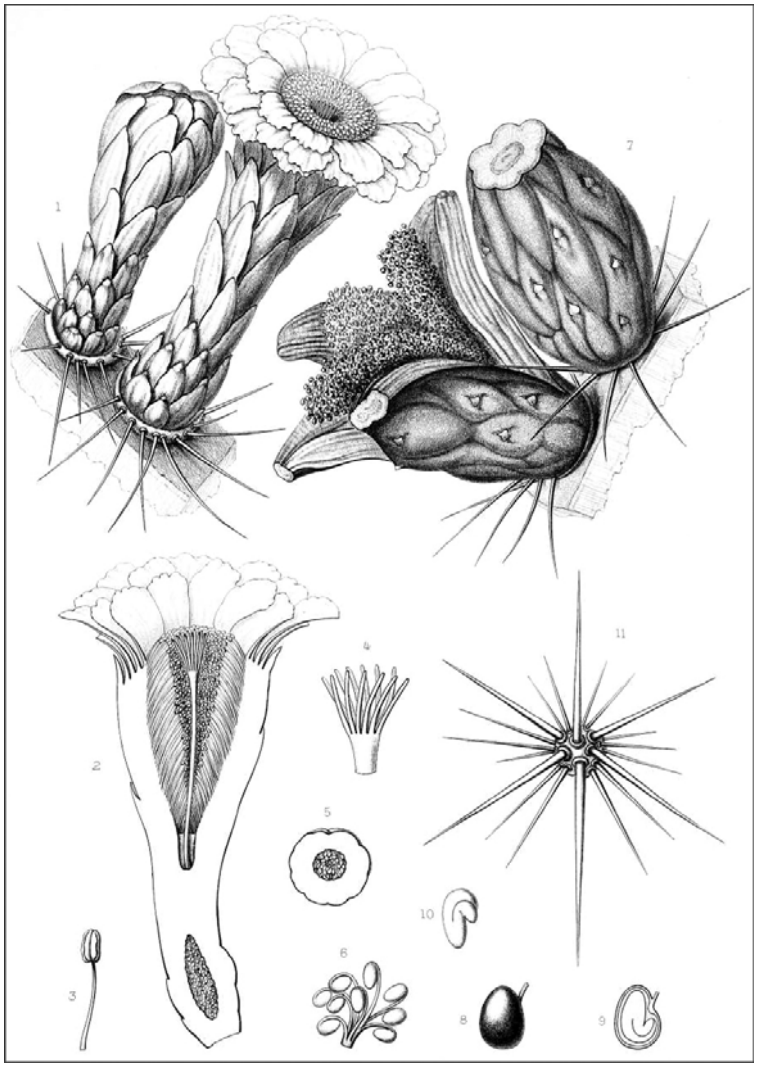
The first botanical illustrations of the saguaro, or Cereus *giganteus* as named by George Engelmann in 1848, were drawn by Paulus Roetter for Engelmann's "Cactaceae of the Boundary", part of the United States - Mexico Boundary Survey Report (1859). With no living plant to use for reference, Roetter worked solely from specimens of spines, dried flowers, and fruit preserved in alcohol. These had been collected in Arizona by George Thurber in 1851 and sent to Engelmann in St. Louis for his work in describing the cacti of the borderlands. To depict the habit, or growth form, of the saguaro, Roetter relied on field sketches from the survey party's artist, Balduin Möllhausen. Without ever having seen the gigantic saguaro in its natural setting, Roetter nonetheless created a magnificent interpretation of the plant which Engelmann chose as the frontispiece for his report.

While Roetter's illustrations for the Boundary Survey are strikingly beautiful, they did not provide a complete botanical illustration of the cactus. In 1892 "Curtis's Botanical Magazine" published Matilda Smith's color illustration of the saguaro with the flowers, spines and habit, all drawn from a live specimen growing at Kew Gardens in England. The following year a more complete botanical plate by Charles Edward Faxon was published in Vol. 5 of "Silva of North America"; his illustration portrayed the flower, fruit and seed, as well as a floral cross section and enlargements of all the flower components. Faxon notes that his drawing was prepared from the top of a severed stem which had been sent to him in Massachusetts from Phoenix. He placed the stem on a board in his greenhouse, and the small buds on the stem flowered and produced fruit, enabling him to depict the complete flowering cycle.

Illustrations from the publications noted here will part of the Florilegium's upcoming exhibit, ***Botanical Art of the Sonoran Desert: Past and Present***, which opens on August 24 in the Ironwood Gallery at the Arizona-Sonora Desert Museum and runs through October 27, 2013. Visit the Florilegium's website to see Roetter's saguaro illustrations as well as those of more recent artists (www.sonorandesertflorilegium.org). – CH



Cereus giganteus
Matilda Smith, Illustrator



Cereus giganteus
Charles Edward Faxon, Illustrator

My Prickly Friends

Cylindropuntia versicolor

Family: Cactaceae
Genus: Cylindropuntia
Species: versicolor (Engelmann ex J. M. Coulter) F. M. Knuth
Common Name: Staghorn Cholla

Habitat: The staghorn cholla is found from around 2,000 to 3,000 feet elevation in rocky desert soils in valley areas and hillsides of the Sonoran Desert.

Range: The majority of the plants within the United States are found in Pima and Pinal County, Arizona and the areas around Tucson comprises the largest population. It is also found across the border within northern Sonora, Mexico.

Description: The stems on this cholla are very distinct in comparison to the other species found within its range. Plants may display a beautiful purple/red color during most of the year and this appearance can be a good descriptive signature (although *Cylindropuntia spinosior,* a neighboring species may also show some similar stem colors during the winter months). Stems are usually about 4 to 12 inches in length and 1/2 to 3/4 of an inch in diameter. In habitat this species is quite variable in stem color as some plants may appear to have very dark red/purple stems and some plants within the same location may be completely green, and will have no sign of the striking reddish purple stem appearance. The spines are rather short (usually around 1/4 to 1/2 inch in length and the spine sheaths are mostly absent on older stems.

Size: This can be a rather large plant at maturity and has been reported at reaching 12 feet or more in height and over 10 feet in width. Large plants are rather striking with a distinctive trunk and can feature a wide heavily branched upper portion or canopy.

Shape: Cylindrical Stem/Jointed

Flowers: Flowering can start as early as April and will usually continue through the middle of May. Flowers can be a variety of colors and sizes. The size of the flower may be from 1 to 2.5 inches in diameter. The plant species name, “versicolor” refers to the various flower colors seen on this cholla. The flowers can be greenish yellow, bright yellow, light red, bright red, dark red, magenta, dark copper or orange. The fruit may also be variable in color from green to red and transforming to yellow. The fruit can remain on the plant undisturbed for quite some time and may be chained (several fruit joined together).

Propagation: From stem segments, green fruit or seed.

Care: This is a very easy plant to grow in any area around Tucson and requires little maintenance or care. It is best suited where it will receive full sun, making it an excellent cholla for adding color to the landscape. As with many of the cholla species, always give this one room to expand. Beautiful, large plants may be expected, especially after many years of healthy growth. Stem cuttings can root quite easily and will slowly transform into a nice robust plant. Added water can also be a great benefit.

Comments: The Staghorn Cholla is a well established native to the Tucson area and could probably also be known as the “purple cholla”. It is a very hardy plant that can survive temperatures as low as 10 degrees Fahrenheit and can also take the extremes of hot and bright desert sunshine as well as very dry conditions. This plant is also a selected favorite for producing the choice cholla buds that are eaten by Native Americans and others who enjoy this yearly treat. *Cylindropuntia versicolor* may also hybridize with several other chollas within its range. The flower color is another marvelous addition to having this cholla around your home. It is a nice, vigorous flowering cholla that will certainly brighten the month of May every year. A recommendation would be to make sure you have *Cylindropuntia versicolor* as one of your prickly friends.

Cactus Rescue Outings Yield Special Rewards

Photo by Jessie Byrd

Over the past 15 years of cactus rescues, the crew is often treated to special glimpses of wildlife. We have witnessed big horn sheep, various non-venomous snakes, Mojave rattlesnakes, Western Diamondbacks (one so big he couldn't move after taking in a large rodent), deer, a fawn bedded down under a tree, coyotes, kit fox, raptors and their nests, turkey vultures, jack rabbits, cotton tails, local bird species and their nests, migrating birds, lizards including Horned lizards and I'm sure there were others observed by the crew.

Joe Frannea

TCSS VOLUNTEERS NEEDED in TWO AREAS

Summer Watering at Pima Prickly Park:
If you have a few hours to spare a few days this summer, we are in need of extra help watering some of the new plants we have put in the park. We want to ensure their successful adaptation to the park by giving them some extra water this first summer and your help would be greatly appreciated. The regular volunteers may be away at various times for vacations the next few months and we need occasional help to fill in while they are gone. You can go anytime from sunrise to sunset any day of the week, and work usually from one to three hours. Watering involves taking the hoses to different planted areas in the park, hooking them up to the underground hose bibs, and then moving them around the individual areas. At the completion of your time you log in what you watered and record your hours so that the next volunteer who comes can track what needs to be watered. (As an added perk ... the hoop house volunteers have a few extra plants to share with other volunteers/) If this is something you might be able to help with, please send a note to **joe@tucsoncactus.org or call the TCSS phone at 256-2447.**

Refreshments Committee:.
We are looking for a few people to add to our Refreshment Committee that sets up and serves food and drink for our TCSS General Meetings the first Thursday of every month. Each month members contribute to our refreshments by bringing something to share, but our committee also brings at least one major item and drink that will serve about 150 people. These basic items are paid for by TCSS, so you will always be reimbursed for the large items that committee members bring. If you enjoy the "gourmet" side of TCSS and can contribute some time to this committee, please contact **Patsy at tcss@tucsoncactus.org or call the TCSS phone at 256-2447.**

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It" table and one of our fabulous members will identify it.

TCSS BOARD
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Cactus Rescue
Cactus@TucsonCactus.org

Cactus Rescue: Chris Monrad/Joe Frannea

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

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, June 20, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

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

June 2013

Thursday, June 6, 2013 7:00pm
Monthly Meeting, "Hedgehog Heaven, the diverse Echinocereus of OroGrande" Presented by Rob Romero

Friday, June 14, 7:00pm - 9:00pm, 2013
A very special program presentation sponsored by Arid Lands Greenhouses and hosted by the TCSS.
"An Aloe Miscellany" Presented by Len Newton

Tuesday, June 11, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

Acknowledgement of Contributions

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

Pima Prickly Park
Jane Erickson
RIchard Wiedhopf
Vonn Watkins

General Fund
Sandi Kilkuts & Family

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society July 2013

Tuesday, July 2, 2013 at 7:00 PM

"Crossing the Andes: Cactus and Succulents of Chile and Argentina"

Presented by Guillermo Rivera

The Andes, is the longest continental mountain range in the world and is the backbone setting for this trip. We will start in central Argentina, visiting the provinces of Cordoba, Salta, Jujuy, for their Gymnocalycium, Echinopsis and Atacama dessert. The scenery combined with more than 15 species of Copiapoa will stun any cactus enthusiast. The spectacular crossing eastbound at 4700 meters will amaze anybody: aquamarine lakes, flamingoes, and volcanos reaching 6800 meters! Returning to Argentina we will see Puna bonnieae, Tephrocactus geometricus, and other cacti in the provinces of Catamarca and La Rioja.

Guillermo Rivera was born in Argentina and is the owner of South America Nature Tours (former Cactus Expeditions). His company is dedicated to the organization of tours throughout South America (Chile, Argentina, Brazil, Peru, Bolivia, Ecuador, Baja California and South Africa) with an emphasis on plants (bromeliads, cacti, and orchids), or birding. He is a former researcher at the University of Cordoba, Argentina. BS degree in Biology, University of Cordoba, MS in Marine Biology at Northeastern University and PhD in Botany at the University of Cordoba.

Be sure to keep Tuesday evening open and join us for a wonderful evening exploring the Andes of Chile and Argentina with our special guest, Guillermo Rivera. Also, stay and have some great refreshments, join in on excellent conversation, win something special and depart with a free plant.

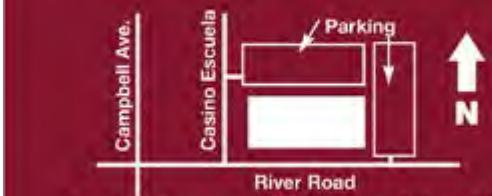
July Meeting Refreshments

Those with family names beginning with K, L, M, N, O, P, and Q please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

TCSS Program Presentation
Thursday, August 1, 2013
"Namibia - Drought to Deluge"

Presented By Doug Dawson

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road

President's Message

Thank you Bob Webb and Toni Yocum of Arid Lands Greenhouses for sponsoring the special Len Newton program on June 14. It was fabulous. I wish we had the equipment to record that presentation. We are going to do this in the near future. I think it will be great to have our monthly meeting speakers and other special programs accessible to all our members. We have more than 1,060 members right now and it wouldn't be possible for all of them to attend a meeting or other programs. So it is important that we can provide them with the access to the information. If you have knowledge and would like to help in this process please contact me.

Sonoran X is fast approaching. "Plants for the Sonoran Desert Hobbyist", will feature Adeniums, Echinocereus, Trichocereus hybrids and the two popular terrestrial bromeliads; Dyckias and Hechtias. We are planning talks and workshops about these plants and they will be featured in our show, silent auction and sales. Now is the time to start selecting and grooming your plants for April 19 & 20, 2014. With your help, this will be the best cactus and succulent plant show ever in Tucson.

Rainbow Gardens Bookstore is no longer in business and has donated their inventory to our Society. In the near future we will be disposing of this inventory of books, magazine and other materials for the benefit of our members and other cactus and succulent societies. We will not be in the retail book business! We are working on the details of this process and you will have the first opportunity to acquire items from this inventory. We will then make it available to other Cactus and Succulent Societies.

It looks like June will set a record for the number of days over 100. Be sure to take care of yourself and your plants during these extremely hot days.

Thank you all for your support.

Dick Wiedhopf, President

Fourth Graders Create a Cactus Garden

Sam Hughes Elementary School in TUSD received a TCSS School Grant to be able to create a garden of native cactus specimens so that the two classes of 4th graders could study up close, draw, plant and share them in the form of an "Earthkeepers' Garden", integrating and reinforcing many subjects from the school year. They purchased some of our rescued cactus to compliment other plants they obtained to create their garden. A couple of weeks before the cactus planting day we worked with each class building our cactus model so they learned all the cactus parts and how they function. On planting day, each student selected their own cactus and a location in the garden to plant it. They learned about cactus gloves, metal tongs and techniques to handle and plant cactus. They also did most of the dirt work and created the paths, lining them with hundreds of rocks. The students created a spectacular garden in short period of time, turning an unused area into something beautiful. If you are near 4th Street and Wilson (2 blocks west of Tucson Blvd.), look over the fence at their creation. This was a great cooperative endeavor by Teachers, Students, Parents and Community.

Joe Frannea

FROM THE FLORILEGIUM

Cereus greggii var. transmontanus, Lucretia Breazeale Hamilton, Pen and ink
Edward Hamilton, Print and Hand Coloring

Cereus greggii, Night Blooming Cereus, Ella Howard Estill, Watercolor

The Florilegium Program's upcoming exhibit, *"Botanical Art of the Sonoran Desert: Past and Present"*, will display a wide variety of botanical images, from exceptionally detailed scientific drawings to what is best described as floral art. This range of artistic intent, from botanical illustration to botanical and floral art, can be seen here in these three portrayals of the Arizona queen-of-the-night cactus.

Lucretia Hamilton's *Cereus greggii var. transmontanus* is a scientific illustration intended to complement text written by a botanist. This type of botanical drawing involves magnification of various portions of the plant as well as presentation of cross sections and dissections to better reveal the plant's structure. With botanical illustration, absolute accuracy and detail are foremost in the artist's mind.

The boundaries between botanical illustration and botanical art begin to blur in Margaret Pope's Peniocereus. Accuracy and fine detail are present, but they are not the primary focus of the piece. By setting the plant in its natural habitat instead of looking solely at its separate parts, the artist gives the viewer a greater understanding of the plant: this is a night-blooming plant and there is as much going on below ground as above.

Ella Estill's painting of Cereus greggii falls within the botanical or floral art category. It is a naturalistic and identifiable rendering, but its purpose is evocative rather than descriptive. The artist's sole intent is to show the beauty of luminous white flowers against the night sky, something that a scientific botanical illustration could not do.

Taken together, these three very different representations create a remarkably complete portrait of the queen-of-the-night. Visit the Florilegium's website to see more illustrations of this unique cactus by Margaret Pope, Ella Estill and Paulus Roetter (www.sonorandesertflorilegium.org).

Peniocereus greggii var. transmontanus, Queen of the Night
© Margaret Pope, 2009, Colored Pencil

"Botanical Art of the Sonoran Desert: Past and Present" will be exhibited from August 24 to October 27, 2013, in the Arizona-Sonora Desert Museum's Ironwood Gallery. --CH

My Prickly Friends

Cylindropuntia acanthocarpa var. major

Family: Cactaceae
Genus: Cylindropuntia
Species: acanthocarpa var. major (Engelmann & Bigelow) L. Benson
Common Name: Major Cholla, Major Buckhorn Cholla

Habitat: Major Buckhorn cholla is found from around 1,000 to 3,000 feet elevation in sandy or rocky desert soils along hillsides and desert flats in and near the Sonoran Desert.

Range: Distribution can be quite spotty with colonies being located in Maricopa, Yuma, Pinal, Pima, Gila and Graham Counties within Arizona. Many years ago *Cylindropuntia acanthocarpa var. major* had been reported as being found in California although today there may be question about those locations and the plants found there. From the United States it extends south into northern Sonora, Mexico.

Description: This variety of *Cylindropuntia acanthocarpa* could be viewed as having a rather olive colored stem with an openly branched display. Stems are 4 to 12 inches in length with narrow, extended tubercles and the stem color may not change throughout the year. Stem size is from about 5 to 12 inches in length and 3/4 to 1.25 inches in diameter. Areoles can display from 8 to 15 light, golden to gray or brown spines and they can vary in length from about 1/4 to 1 inch or more in length.

Size: Mature plants will be about 3 to slightly taller than 5 feet in height and display a somewhat wide and drooping upper proportional display (found mainly on larger plants).

Shape: Cylindrical Stem/Jointed

Flowers: Flowering can start as early as April and will usually continue through the middle of May. Flowers are rather distinct and may be only a couple of colors although a variation in the light or darkness may be seen. The size of the flower may be from 1.5 to 2.5 inches in diameter. Flowers can be yellow, orange, red or even a coppery-brown color. The spiny fruit is green with spines covering the top portion. As the fruit matures it will turn yellow, eventually becoming completely dry and will drop to the ground.

Propagation: From stem segments or seed.

Care: This species can be a rather easy landscape plant to maintain in a desert landscape, but it is one of those that is rarely found at the local nursery. Small plants from cuttings or those grown from seed, should be observed until they acclimate to their surrounding. As with most plants try to monitor the condition of the entire plant for growth, and observe a healthy robust appearance. Stem cuttings take root easily and in time a nice specimen can be produced.

Comments: *Cylindropuntia acanthocarpa var. major* is just one of the four varieties recognized within *Cylindropuntia acanthocarpa*. Near Tucson it is located just west of Marana, Arizona near the Silverbell mountains and also north of the Pinal mountains in Pinal County. The other recognized species include *Cylindropuntia acanthocarpa var. acanthocarpa, Cylindropuntia acanthocarpa var. coloradensis* and *Cylindropuntia acanthocarpa var. thornberi.* Flower buds from the major cholla have always been selected and gathered by the Pima Indians as well as other tribes in mexico as a favorite for producing the choice food treat enjoyed each year. This species also can hybridize with several other chollas within the various populations. A favorite flower color that is quite striking is the dark copper or the orange that is often found. It always makes one stop for a second or even a third look! Some may find this plant to be a rather slow growing species but within time it can certainly be a great prickly friend.

CDO Students Create Entrance Landscape

Canyon del Oro High School, Amphitheater School District, received a TCSS School Grant to engage students in a school service landscaping project so that students learn about methods to care for desert vegetation and their responsibility for preserving the desert. About 70 students participated in their project. This included 6 Arts students who created ceramic identification plaques that identify each plant by common and scientific name, 20 Construction Technology students (5 to develop the final plans for planting the vegetation and 15 to help in the planting project) and 10 National Honor Society (NHS) students helping with planting and will provide maintenance to the area after the project is completed. The remaining 25 students were volunteers from the general student population to help with the installation.

Recently The CDO campus was updated with a variety of additions and renovations including the installation of a large concrete wall with the school name and logo imbedded in the wall. The area surrounding the wall is a vast dirt area that needed dressed up using vegetation, rock covering and boulders to provide a beautiful and welcoming entrance to the school. This project was financed entirely through donations by students, alumni, and community groups including TCSS. One boulder within the landscaping area will have a plaque attached to it recognizing the community groups that supported the project through the donation of time, materials, and money. The labor for the project was done by school staff, students, and volunteers.

Joe Frannea

Desert Garden Tour

The successful spring member Desert Garden tour took place Sat., April 27. Over 200 TCSS members and guests visited the 5 central Tucson area Gardens. Also a thank you to the 5 garden owners: Wendell and Rosemary Nieman, David Yetman, Jennifer Walker, Margaret Pope and Michael and Linda McNulty, for all their efforts to make their gardens so beautiful.

A big thank you to the 30 TCSS volunteers that made the whole day run smoothly.

The garden tour committee, consisting of Nancy Reid, Ed Bartlett, Robert Ellis, Patsy Frannea, Marija and Rim Tallat -Kelpsa and Bill Salisbury, is already working on the fall tour. More details to follow.

If you would be willing to share your garden with other TCSS members, please contact Bill Salisbury at 520-299-3301 or lusalisbury@comcast.net, or any other committee member.

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It?" table and one of our fabulous members will identify it.

"Monsoon" Season

"Our annual "monsoon" season will soon be upon us! Every year a summer thunderstorm or microburst may damage or even topple local Saguaros.

If you find that YOU have (or know of SOMEONE else who has) a freshly fallen Saguaro on your (private) land - I would greatly appreciate an opportunity to make some "cuts" upon it in order to look at aspects of its internal structure - before it is disposed of.

No "collection" of any parts of the Saguaro would be made. I will be furthering knowledge about this icon of the Sonoran Desert through your contribution of its information.....

Contact: TCSS Member Bill Peachey (cell) 520-603-1666 OR e-mail williampeachey@cox.net. Thank You! Feliz Sendas

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Cactus Rescue
Cactus@TucsonCactus.org

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trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, July 18, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

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

July 2013

Tuesday, July 2, 2013 7:00pm
Monthly Meeting, "Crossing the Andes: Cactus and Succulents of Chili and Argentina" Presented by Guillermo Rivera

Tuesday, July 9, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

Tuesday, July 16, 7:00pm, 2013
Pima Prickly Park Committee Meeting at the U of A College of Pharmacy

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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
Hal Myers
JackArmitage
Ceil Matson

Conservation Fund
Roger Watson

TUCSON CACTUS AND SUCCULENT SOCIETY
HASAÑ BAHIDAJ

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society August 2013

Thursday, August 1, 2013 at 7:00 PM

"Namibia: Drought to Deluge"

Presented by Doug Dawson

Aloe dichotoma on River Road

Namibia, Africa, is always a fascinating succulent desert to experience. A new dimension of Namibia was shown during my May, 2013 trip. A severe drought occurred in 2012 followed by one of the most extreme wet periods in recent Namibian weather history. From January through April of 2013, it rained, and rained, ... and rained. It would have been like living in Phoenix or Tucson and having a fall season with over three months of good rains most days. The rivers and dry arroyos all flooded. The Orange River, forming the Namibian/ South Africa border was swollen for months, overflowing its banks dramatically. In the north of Namibia things were equally wet. Luckily when arriving in Windhoek, Namibia in early May, the timing was right. The skies opened up, rivers subsided and traveling to all the regions were safely conducted as planned.

Doug is a retired math professor and does extensive botanical travels to areas of the world where succulents grow. These include Mexico, Chile, Argentina, Yemen, Soccotra, and Africa as well as our own state of Arizona. In recent years, he has

Continued on P2

Conophytum friedrichiae

Lithops ruschiorum

August Meeting Refreshments

Those with family names beginning with R, S, T, U, V, W, and X please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!

TCSS Program Presentation
Thursday, September 5, 2013
"Cool Plants from South Africa"

Presented by Bob Webb

Continued from cover

organized 8 botanical exploratory trips to South Africa and Namibia, camping on local farms and public areas by night and exploring the surrounding mountains and hills by day. To aid in his travels, he has a background in languages. These include German and French. Nowadays Afrikaans has become a much more useful language for him in rural South African areas.

For many years, one of his key interests has been seed-growing of cacti and succulents. Other interests are photography and PowerPoint presentations with succulent content. He has delivered many workshops and speaking engagements in Arizona and other states.

Doug's private plant collection has an emphasis on seedlings, lithops, other mesembs, Arizona natives, and other cacti. He is a member of the CSSA, Central Arizona Cactus and Succulent Society, and the Tucson Cactus and Succulent Society.

Be sure to see and enjoy this excellent program by Doug Dawson. Partake in great food, conversation and get a free plant

Aloe erinacea

Psilocaulon dinteri

President's Message

In 2010, I had the opportunity to chat with County Administrator, Chuck Huckleberry about the possible availability of land that could be used to plant more of our rescued cacti and succulents and develop a demonstration garden for the benefit of residents and visitors. The next day I got a call from Rafael Payan, Director of Pima County Natural Resources, Parks and Recreation, saying let's get together and talk about this cacti and succulent garden.

Rafael and his staff were enthusiastic about this and pointed out the land in front of their office complex that might serve as a perfect place to build a garden. It was the former site of a deep sand and gravel pit that was filled but not useable for buildings or athletic fields. Pima Prickly Park was born.

This has been the perfect public, private partnership with everyone working together to create a wonderful park celebrating cacti and other succulent plants. It will take many more years to reach our goal but the start has been wonderful. It is exciting to work with Rafael and his tremendous background as a Landscape Architect, Park Administrator and Director of Pima County Natural Resources, Parks and Recreation.

On Friday July 26, 2013 Rafael Payan retired as Director. This park and all the others that he has developed and administered will be a lasting tribute to him.

Thank you Rafael for all your support.

Dick Wiedhopf, President

"Monsoon" Season

"Our annual "monsoon" season will soon be upon us! Every year a summer thunderstorm or microburst may damage or even topple local Saguaros.

If you find that YOU have (or know of SOMEONE else who has) a freshly fallen Saguaro on your (private) land - I would greatly appreciate an opportunity to make some "cuts" upon it in order to look at aspects of its internal structure - before it is disposed of.

No "collection" of any parts of the Saguaro would be made. I will be furthering knowledge about this icon of the Sonoran Desert through your contribution of its information.....

Contact: TCSS Member Bill Peachey (cell) 520-603-1666 OR e-mail williampeachey@cox.net. Thank You! Feliz Sendas

Attempted Suicide by Agave: Agave gigantensis Found in Baja California

by Bob Webb and Greg Starr

Greg Starr standing next to an Agave gigantensis individual on Cerro el Potrero

Note: This account follows from a presentation at the March 2013 TCSS Meeting, when Bob Webb and Greg Starr speculated that *Agave gigantensis* was not in cultivation and that most plants bearing that name were actually one or more forms of *Agave sobria*.

The Sierra de la Giganta, named for a mythical giant goddess of Cochimi Indian lore, is an extensive, rugged volcanic mountain range encompassing many smaller sierras, and extending much of the length of the Mexican state of Baja California Sur. Although its peaks, referred to as cerros in Spanish, are not particularly high in elevation, they make up for it with loose, weathered rocks, the kind that makes hikers think they are walking on a path of loose marbles. Those marbles are on steep slopes and can have the same effect that ball bearings do when rolling a heavy object along a smooth surface.

When Howard Scott Gentry studied the agaves of Baja California in the early 1970s, he spent much time around Comondú in the central region of the Sierra de la Giganta, and while there, collected *Agave sobria*, which T. S. Brandegee had described in 1889 from specimens collected on the slopes above Comondú. , Gentry indicated that the people in Comondu refer to this one as “mescal pardo” or “pardito”, and that it was good for eating and distilling. These same men went on to say that the best one for eating and distilling was called ‘lechuguilla’ and grew in the Sierra de la Giganta. A local guide was appointed to accompany Gentry’s assistant, Juan Arguelles, to collect samples. They traveled by horse and returned with plants from near the base of the mountains above the Llano San Julio. There were no flowers, but leaf specimens were pressed and cataloged as *Agave gigantensis* while young plants were kept for later planting. Gentry continues by saying that the accounts about agave uses made by the Jesuit priest Miguel del Barco, who lived at the Mission of San Javier for over 30 years, apparently applied to both *Agave sobria* and *Agave gigantensis*. Remember the name of the San Javier Mission as that will be on the test at the end of this article.

While exploring for agaves in the northern end of the Sierra de la Giganta, Gentry was guided by the rancher at San Sebastián up into the Sierra de las Palmas, which was called Sierra Campana by the locals and now known as Cerro las Palmillas. There, Gentry found an unidentified plant that he eventually named *Agave gigantensis*, and reported that his guide told him that maguey was more abundant on a mountain to the north known as Cerro el Potrero. In his description, he emphasized that the species is associated with an oak woodland community, with the tree Nolina palmeri var. brandegeei being a conspicuous component. In his 1978 account of the Agaves of Baja California, Gentry lists several collections from the vicinity of San Javier under *Agave gigantensis*, all which have gray or gray-green leaves and not the dark green leaves of the plants from his type locality. This publication was published prior to the “agave bible” book that came out in 1982, and was nearly

Details of the leaf, marginal spines, and leaf impressions on Agave gigantensis

completely used word for word in the Agaves of Continental North America. Notice the phrase “nearly completely”. On page 66, there is a photo of a transplanted plant (without a locality) in flower showing an arching inflorescence, or as Gentry says “with geotropic flowers”. Turn to page 68 and there is a photo of an *Agave gigantensis* in habitat on Sierra de las Palmas showing a much thicker flower stalk that is straight upright. This photo was left out of the big book, and we believe this resulted in the misconception that *Agave gigantensis* is a gray leaved plant with a thin, arching inflorescence with no regard to the dark green leaved plants with the thick, straight upright flower stalk. Because the gray leaved plants occur along the roadsides and are much easier to access, collectors have been growing and selling them as *Agave gigantensis* although we believe they are more aligned with one of the *Agave sobria* forms.

We have been working on a revision of Gentry’s monograph on the Agaves of Baja California, initially because new species were being described while others were poorly documented with photographs and distribution notes. We quickly realized that there were other undescribed species on the peninsula and a few puzzles to solve, one of which was the identity of this Gentry’s *Agave gigantensis*, described in his 1978 monograph. Quite a few specimens have been deposited in herbaria bearing this name, reputedly collected from throughout the Sierra de la Giganta, and all the collection notes mention either a climb up a mountain or some steep area where the plant was found. We went to several of these places, and we found what appeared to be different forms of the blue-green *Agave sobria*. With some reluctance, we decided we had to go to the type locality where Gentry collected his original specimens.

In April 2013, near the end of a very productive trip finding and photographing agaves in the southern half of the Baja California peninsula, we found ourselves on a long but relatively good dirt road heading into the northern interior of the Sierra de la Giganta. Naively, we decided we would go to Rancho San Sebastian and have a look around, perhaps thinking that the species would magically appear to us as others had. Ranchos in Baja California have a habit of moving, as families grow and property ownership changes. We found Rancho San Sebastián in a different place and at a lower elevation than the map suggested, and the owners did not know of any maguey in the vicinity. They did point up the road to more ranchos, and we drove on.

After stopping at several ranchos and getting the same answer, the rancheros at Rancho el Cochi told us to go up a steep four-wheel drive road through an obscure gate in their corralWe passed over a steep divide with some rather precipitous exposures and came to another rancho, where laughter and voices indicated that the inhabitants were home. Only problem was that they did not respond to us. We continued up a very steep and rocky road and came to a place called Rancho la Huertita, where Francisco greeted us at his gate late in the afternoon. He told us that he had lived there with his family

Volcan los Tres Virgines from the chiva trail leading to the top of Cerro el Potrero

Francisco posed on a cliff near the top of Cerro el Potrero, Baja California Sur. The Gulf of California is visible in the distance.

for 30 years, and when we inquired about maguey, Francisco indicated that there were some on the Cerro el Potrero which was the mountain looming over his beautiful rancho. We also asked if palmilla (*Nolina palmeri var. brandegeei*) and encino grew on the cerro as well. Francisco responded in the affirmative and suggested the hike to the topw would take 2-3 hours. Because of the lateness in the day and the difficulty getting to that point, we asked if we could camp, and he readily agreed. Francisco came by later in the evening, and over a beer told us that his family was in town and that he would be available to take us up the mountain the following morning.

That evening, we walked around to inspect the surrounding vegetation and scenery. The mountain looked seriously rugged, with no obvious pathway to the summit, and the vegetation was decidedly spiny and wicked. Several species of pricklypear and cholla were present, as well as *Ferocactus rectispinus* and the obligatory *Pachycereus pringlei* and *Stenocereus gummosus*. Francisco had names for all the plants and would tell us if the ubiquitous chivas (goats) and ganado (cattle) would consume them. No agaves were in the vicinity.

Morning came, and off we went along a chiva path towards a saddle. Along the way we encountered many examples of the gray leaved maguey we identified as *Agave sobria*. Higher up, in the very steep trail sections, we came upon a beautiful blue-green plant that resembled photographs we had seen of an herbarium specimen that allegedly depicted *Agave gigantensis* on Cerro la Giganta to the south. It was yet another form of A. sobria. Upon reaching the saddle, we had an unexpected and magnificent view of both the Gulf of California to the east and Volcan los Tres Virgines to the north. We almost thought to stop, but Francisco seemed insistent that there was another maguey on top and that we had not come to it yet.

We reached the top after some effort, and still we saw the blue-green maguey. Walking was a lot easier along the numerous chiva paths, and we traveled southward towards what appeared to be the summit of Cerro el Potrero. Numerous *Nolina palmeri var. brandegeei* appeared, first solitary, then in large groups, and then a few small oaks. As if by magic, we began to come across a large, solitary and green agave, which we knew immediately must be the elusive *Agave gigantensis*. The setting and characters of the plant matched what Gentry had described, although he had failed to emphasize that green color and large size compared with A. sobria. Greg used the machete we brought along to take some herbarium specimens, given the novelty of this find.

After traipsing through the homicidal brush and taking hundreds of photographs of every maguey we could find, Francisco talked us into taking the more direct (and more vertical) route down to his rancho. We were already bloodied, even though Francisco still looked as fresh as he had earlier in the morning, when we started down a rather precipitous chiva path that seemed to be heading for a vertical cliff. On one rather steep slope with loose rocks strewn about, approximately where we saw a nearly complete skeleton of a cow, Bob fell face-first onto the slope, fortunately without going over the cliff, and the hike suddenly took on new dimensions. Camera smashed, skin torn, and a large hematoma rising below his knee, we were fortunate that this failed suicide attempt had only resulted in a wounded but ambulatory hiker. The broken camera was way preferable to a broken leg.

Straight down we went, trying to gain footholds in the marbles poised beyond the angle of repose and handholds on those spiny shrubs – Greg actually used an *Agave gigantensis* plant as a handhold at one point – we passed through an extremely steep barranca on chiva trails that came and went. Francisco borrowed the machete and spent most of his time slashing through shrubs and chollas, making a crude trail. Strangely, Greg decided to forego using his camera, an inconceivable behavior because we were surrounded by Agaves, to concentrate on walking. We both ran out of water. Bob decided life on his rear end was preferable to the more typical upright position, and at least a dozen falls later we arrived on ground a little more level with a trail leading to Francisco's back gate, seven hours (remember it was supposed to be 2-3 hours) after starting off. Francisco acted like he had just taken a stroll in the park, while Bob looked like he needed a wheelchair and Greg was searching for a cold drink.

Francisco's family had arrived, and they treated us as honored guests, despite the fact that Bob resembled an extra from a bad zombie movie, Greg appeared to need intravenous fluids, and neither one of us spoke significant Spanish. They fed us and gave us cold drinks as Francisco's granddaughter played around our feet. Later on, we drove into Santa Rosalía to look into the ferry service to Guaymas. Two security personnel at the port looked alarmed at bloodied Bob, who merely asked for directions to the nearest pharmacy after declaring "esta bien" when asked how he was. The skin would regrow and the blood would wash off, but the memories of that hike will never fade.

So here is what we think: the reason for all those *Agave sobria* masquerading as *Agave gigantensis* in cultivation and in herbaria is simple. When faced with a suicidal climb up a rugged cliff, the people who collected the plants or seed stopped at the first nice maguey they saw, which happened to be a form of *Agave sobria*, and mistakenly thought that was Agave gigantensis. Gentry's description, which states that the plants are "green to glaucous green," is sufficiently vague to mistake this beautiful form of *Agave sobria*, with its numerous compact leaves and conspicuous banding, for the real thing. Trust us – it would have been a lot easier to have stopped at the first interesting plant we came to instead of attempting suicide by Agave on Cerro el Potrero.

My Prickly Friends

Cylindropuntia imbricata

Family: Cactaceae
Genus: Cylindropuntia
Species: imbricata (Haworth) F. M. Knuth
Common Name: Cane Cholla, Tree Cholla, Candelabrum Cactus, Walking Stick Cactus, Tesajo Macho, Abrojo, Coyote Candles, Velas de Coyote

Habitat: Plants are seen mainly in rocky and sandy soils found throughout a variety of localities from 3,500 to over 6,000 feet elevation. It can often be seen growing in arid grasslands, deep alluvial soils of valleys, Juniper-Pinyon woodland and may also appear along mountain hillsides, rocky slopes, canyons and valleys.

Range: This cholla is found from the southern parts of Colorado into and through New Mexico, southwest Kansas and Oklahoma. It also extends southward throughout the western parts of Texas and is reported to be found in very limited colonies in southeastern Arizona, although Arizona native plants seem to be only *Cylindropuntia imbricata x spinosior*, and more habitat study may be needed for confirmation. It also extends below the United States border into upper elevations in the Chihuahuan Desert and as far south as San Luis Potosí, Mexico.

Description: This large-stemmed cholla is usually found growing from a single trunk but a multi-stemmed trunk may also be seen. One distinctive feature of *Cylindropuntia imbricata* is the rather thick, heavy appearance of the stems and the large elongated tubercles. Stem size can vary from about 5 to 12 inches in length and .75 to 1.5 inches in diameter. The rather distant areoles and spine clusters can be quite dangerous with each spine being equipped with notable barbs. Spines are from .25 to a little over 1 inch in length and can number from 8 to as many as 30. Each reddish-brown spine is heavily barbed and covered with a translucent white to light tan sheath. One noted feature in *Cylindropuntia imbricata* is that it can withstand some extreme weather conditions throughout the range. Plants seen growing further north tend to be much smaller and as it extends southward the plant size increases and the stem diameter may increase as well. Variation is well noted with this species.

Size: This is a rather large species that can mature to at least 10 feet tall depending on the location, and can extend to over 6 feet in width.

Shape: Cylindrical Stem/Jointed

Flowers: Flowers appear in late April through May and can present a spectacular display. The color is usually a bright magenta, or a deep rose-pink, depending on ones description of color. These colors are the most common for this species although there are white flowering plants and also orange flowers have been seen as well, but this is a rare find. The size of the flower may be from 1.25 to 3 inches in diameter and the petal margins are rounded and can have a slight gap at the apex. Young fruits are noted for the long leaves and spines covering the top portion. As the fruit matures all spines will disappear, it will turn yellow, eventually become completely dry and drop to the ground.

Propagation: From stem segments or seed.

Care: This is one of the most frequently cultivated chollas and requires little care or attention. It is not particular about types of soil and can easily grow well in areas where temperatures can drop to 0 degrees Fahrenheit. As with most chollas it may require a somewhat open position in your yard or garden and may need an extra rocky or easily draining soil in locations where more rain may occur.

Comments: *Cylindropuntia imbricata* may be the most widely propagated cholla. No actual records can be found and because it can easily survive in many locations within the United States and beyond, it has been widely cultivated. It is known that the fruit of this plant is extremely acid and with lots of mucilage so please try to avoid the “snack” temptation. The name “imbricata” translates to “overlapping tiles,” and this may describe the appearance of the elongated tuberculate areoles on the stem. The habitat does overlap with *Cylindropuntia spinosior* and hybrids are common. A shrubby, thick stemmed variety with white spines, known as *Cylindropuntia imbricata var. argentea* is a plant located around Mariscal Mountain in Big Bend National Park. Be sure to make room for the cane cholla in your garden and it will soon become a treasured prickly friend.

FROM THE FLORILEGIUM

One of the goals of the Florilegium Program is to encourage contemporary artists to illustrate plants of the Sonoran Desert in order to draw attention to its unique flora and inspire efforts to conserve it. The Program hopes that artists will look beyond the more familiar plants and find equally fascinating but lesser known specimens to illustrate.

One artist who has done exactly that is Carolyn Hitchcock. She has worked diligently in Margaret Pope's "Drawing Plants for a Florilegium" class since its inception. One of the lesser known plants that Carolyn chose to illustrate is *Graptopetalum rusbyi*, or Rusby's stonecrop.

This tiny plant was first described in 1883 by E.L. Green as *Cotyledon rusbyi,* giving credit to Dr. H. H. Rusby who had collected the plant near Clifton, Arizona. Twenty years later Britton and Rose placed the plant, with reservations, in the genus Dudleya. In 1920 Edward Bartram found the plant in Sabino Canyon, and at Rose's request sent specimens to the New York Botanical Garden where it flowered in 1923. At this point Rose reclassified the plant as Graptopetalum rusbyi and described it in the journal, Addisonia. The illustration accompanying Rose's account was by Mary Emily Eaton, the highly skilled artist whose work greatly enhanced Britton and Rose's The Cactaceae.

Carolyn recently completed the Nature Illustration Certificate at the Desert Museum's Art Institute. After a career of teaching seventh grade, answering emergency lines and police dispatching, all while running a private no-kill animal shelter, she wanted to do something different in retirement that would provide endless learning. Fortunately for the Florilegium Program, Carolyn found the Art Institute and botanical illustration. "A microscope and a plant exposed a whole hidden reality. Currently I am working on the chollas on my property. A simple task, I thought. Gleefully wrong!"

Contemporary botanical artists have been invited to enter the juried portion of the Florilegium Program's upcoming exhibit, *Botanical Art of the Sonoran Desert: Past and Present.* The exhibit will be shown in the Ironwood Gallery and the Baldwin Education Building at the Arizona-Sonora Desert Museum from August 24 through October 27, 2013. -- CH

Graptopetalum rusby
Mary Emily Eaton
Watercolor
Addisonia, Vol. 9 No. 2, 1924

Graptopetalum rusbyi
© Carolyn Hitchcock, 2012
Colored Pencil

TCSS Field Guide to the Agave, Cactus, Yucca and selected succulents of Arizona

1. How limited is the distribution of *Coryphantha scheeri var. robustispina*, Pima Pineapple Cactus in the state?
2. Just how small is *Pediocactus peeblesianus*?
3. What is the abundance of *Agave parviflora*?
4. How many cactus are there in Arizona?

Where do you find answers to questions like these?

In the past ten years there have been books published that address occurrence and distribution of selected members of the agave, cactus and yucca families present in Arizona. However, none of these books address the full compliment of those families. The books that are more comprehensive were published prior to the 1970's and have not been updated for over thirty years. Since May of this year members of the TCSS have been actively preparing a field guide in book and app form that will include all recognized agave, cactus, yucca and selected succulents that occur within the Arizona boundary. The book will be an up to date accounting with current nomenclature of how to identify and locate those species within our state. The field guide will not be a scientific tome but is designed for the general public use. Our layout will be a two page spread per species with a distribution map, species description and three or four photos including habitat and close up.

For production of the book we plan to access TCSS members as authors, photographers, illustrators, editors, as well as for layout, peer review, production management and fund raising. Our main authors include Peter Breslin, Rob Romero, Greg Starr, Vonn Watkins and Matt Johnson. Peter, Rob and Greg have all made recent presentations at TCSS monthly meetings. Greg is a recognized expert on agave species and has a recent book out on agaves. For the past few months Vonn has written the popular My Prickly Friends articles for the TCSS newsletter. Matt, author of "Cacti, other Succulents and Unusual Xerophytes of Southern Arizona", will contribute as author and technical advisor. Together this group has compiled hundreds of in the field hours photographing, measuring and compiling distributional data on our species of interest. We have at this time photos including flowers of over 90% of the plants to be included in the book. Margaret Pope, botanical illustrator, will be assisting with black and white illustrations. Maria Voris who has a background with education book production will direct the formating and layout. John Durham will coordinate fund raising. Thomas Staudt will work as production manager and promotional director.

Answers

1 Limited to small areas in southern Pima County as well as scattered parts of Santa Cruz County.

2 Dime - See photo for answer.

3 The Center for Plant Conservation indicates there are only two dozen sites in Santa Cruz County. However our authors have located small but abundant populations in Pima County as well.

4 When the book comes out we will have that answer.

All photos by John Durham

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our "What Is It?" table has become very popular! If you have a mystery plant, please bring it to the monthly meeting. Photos will work, too. One of our fabulous members will identify it for you!

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trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Tuesday, August 20, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

6495
Cacti Rescued - Since 1999
308 Rescues - 22,440 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

August 2013

Thursday, August 1, 2013 7:00pm
Monthly Meeting, "Namibia: Drought to Deluge" Presented by Doug Dawson

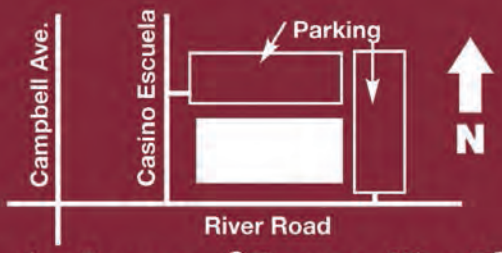
Tuesday, August 13, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

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 Program
Alan & Susan Rogers
Cherie Gossett

Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society September 2013

Thursday, September 5, 2013 at 7:00 PM

"Travels in Africa and ArabiaX: The Greatest Hits from East Africa"

Presented by Bob Webb and Toni Yocum, Arid Lands Greenhouses

Bob holding a specimen of Sansevieria dawei at the type locality in Uganda.

Bob Webb and Toni Yocum have travelled for 3 months in East Africa, mostly with Len Newton, renowned succulent plant taxonomist from Nairobi, and Bhwire Bhitala, a Sansevieria horticulturalist from Tanzania. Their trips have been focused on seeing and photographing succulent plants in the wild. The first trip started off focused on Aloes, but other plants were easily observed as well. Recent trips have focused on finding new species of Sansevieria and starting a revision of the genus. Bob and Toni have traveled to Kenya, Tanzania, and Uganda in their journeys, seeing a wide variety of landscapes in this highly variable region.

In this program, they will discuss their favorite 10 groups of succulent plants they have seen, arriving at a top 10 list of succulent plants they have observed in the wild. Ranking favorite finds from perhaps more than a thousand species seen in the wild is no easy task, but they sorted through their images to show everything from baobabs to small Euphorbias, from small succulent plants to arborescent Sansevierias. Included are several undescribed species that they have found with their friends, as well as some rare species observed well outside their known ranges.

Bob Webb and Toni Yocum are owners of **Arid Lands Greenhouses at 3560 W. Bilby Road Tucson AZ 85746 Phone: (520) 883-9404.**

Bob and Toni have collected succulent plants for over 30 years. Recently, Bob retired as a hydrologist with the U.S. Geological Survey in Tucson; however, he has worked as a plant ecologist in the southwestern United States and Baja, California for more than 35 years. Toni retired as a registered nurse as well.

Toni looking at a large Kleinia odora.

Bob, Bhwire and Len examine a Euphorbia quadrangularis.

They have been traveling to the Arabian Peninsula and Africa since the late-1990s and have visited Oman, Kenya,

Tanzania, Uganda, Namibia, Botswana, Socotra, Yemen and South Africa in search of succulent plants.

Bob has produced around 200 publications, including 14 books, with many more on the way. Several of these books are benchmark volumes on environmental change in the Mojave and Sonoran Deserts. In his "retirement," he's focused on plant taxonomy and ecology, writing papers on Baja California and Africa.

Please be sure to come out and enjoy this fantastic program from our notable members, Bob Webb and Toni Yocum. It will really be a great way to begin the month of September. Be sure to bring a friend and also enjoy the great refreshments, win a plant and get a free plant at the end of the evening.

TCSS Program Presentation

October 3, 2013 at 7:00 PM

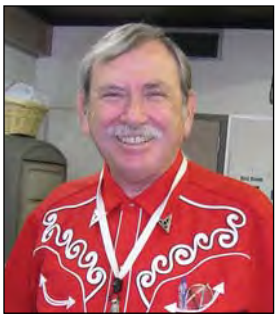
"Saguaro Study at Saguaro National Park"

Presented by Elizabeth Krone

Instructional Professional, ASU, Polytechnic Campus

Meetings are held on the first Thursday of each month.

Junior League of Tucson, Kiva Bldg.
2099 E. River Road



President's Message

In the current issue of the Cactus and Succulent Journal (2013 Volume 85 Number 4), our member Bill (William C.) Thornton wrote "an opinion" entitled "Should endangered plants be propagated commercially?"

Bill makes compelling arguments for the Endangered Species Act (ESA) to be enhanced to provide for certified commercial growers to produce these rare plants which would have three major effects: "help take the profit out of illegal collecting" and "reduce the threat to wild populations" and through the sale of these commercially produce plants, "help earn much-needed revenue for rare plant research and conservation programs"

We will have Bill talk more about this and how we might help in getting the ESA enhanced. I hope there are many of you that will support this idea.

We have received the most generous gift from Helen and Kevin Barber consisting of the entire inventory of their Rainbow Gardens Bookshop. This first offering of these books and journals will be September 28, 2013 and restricted to current members ONLY. Membership will be validated prior to entering the sales area. Check out the story and details for this and other sale dates in this newsletter and on our website. Many thanks to Val Little for organizing this huge gift and to all who helped pack and move it to the current site (Helen & Kevin, Joie Giunta, Joe & Patsy Frannea, Doug Rowsell and me).

Sunday, September 15, 2013 is our Good Times Silent Auction. Check out the information in this newsletter and on our website. This is a great time to get rid of extra plant and/or get some new addition to your garden and collection.

Don't miss the Botanical Illustration showing at the ASDM until October 27, 2013. This is put together by our Florilegium Group and is spectacular. Thanks to all the committee members.

And there is more in September. Check it all out!

Thank you,

Dick Wiedhopf, President

MARK YOUR CALENDAR

The Fall 2013 TCSS Desert Garden Tour has been finalized and will be Sat., Oct. 12, 2013, 9 am to 3 pm. Five large, beautiful and very interesting gardens to tour. You may get several ideas that you can use in your garden.

They are grouped near each other on the far east side of Tucson. Pictures and directions will appear in the Oct. newsletter.

At the Sept. and Oct. general meetings there will be sign up sheets for volunteers to help on Oct. 12 at the gardens.

"Monsoon" Season

"Our annual "monsoon" season will soon be upon us! Every year a summer thunderstorm or microburst may damage or even topple local Saguaros.

If you find that YOU have (or know of SOMEONE else who has) a freshly fallen Saguaro on your (private) land - I would greatly appreciate an opportunity to make some "cuts" upon it in order to look at aspects of its internal structure - before it is disposed of.

No "collection" of any parts of the Saguaro would be made. I will be furthering knowledge about this icon of the Sonoran Desert through your contribution of its information.....

Contact: TCSS Member Bill Peachey (cell) 520-603-1666 OR e-mail williampeachey@cox.net. Thank You! Feliz Sendas

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It?" table and one of our fabulous members will identify it.

The BOOK BONANZA Is Coming!

50% OFF every book!

September 28, 9:00 – 1:00 TCSS MEMBERS ONLY

STONE & BLACKLIDGE
In front of Plants for the Southwest.
Parking on Blacklidge.

Mark your calendars for Saturday, September 28, the first opportunity to shop the incredible inventory of books given to TCSS by Rainbow Gardens Bookshop. This shopping bonanza is open to TCSS members only and will take place from 9:00 am to 1:00 pm -- 4 hours only.

Choose from among 7,000 books, over 450 titles! Many volumes have only one or two copies left so get them while we have them. TCSS is making these books available to all our Members at very affordable prices. After our members have first crack at these on September 28th, they will then be available to other organizations. So, come prepared to shop!

50% OFF the lowest list price on every book! That is the price for every new book in the collection. In addition, we have over 1,000 used and gently worn books.

Many of these books are priced at $1.00 - $3.00. We also have lots of rare and out of print books and plant journals from around the world. You don't want to miss this true BOOK BONANZA!

FROM THE FLORILEGIUM

Chris Bondante is one of the contemporary botanical artists whose work is part of the juried portion of the Florilegium Program's current exhibit, *Botanical Art of the Sonoran Desert: Past and Present.* Chris has degrees in microbiology and scientific and medical illustration; her illustrations have appeared in several publications, including "The New Our Bodies, Ourselves" and "Key to the Invertebrates of Southern California Coastal Waters". She recently retired after 21 years as a biology instructor at Pima Community College and now devotes herself to botanical art and illustration, working with both the Florilegium Program and the Legumes of Arizona project.

One of the challenges of botanical illustration is finding a logical and organized way to present the drawings of various plant structures. Starting at the top left of the drawing, Chris shows the cycle of flowering, starting with a closed flower and progressing through the fully opened flower (side view and top view), moving then to longitudinal sections of the flower to reveal the reproductive structures, and ending finally with a grouping of mature seeds. The bottom portion of the drawing is reserved for showing the complete habit, or growth form, of the plant in bloom and an enlargement of the surface of the cactus pad including a detail of the glochids.

Although not a tiny flower, the cactus flower nonetheless requires magnification in order to see clearly the reproductive structures. A magnifying glass, dissecting microscope or macro lens can all be invaluable for capturing details before the plant fades.

Plan to attend the exhibit and see the marvelous details in Chris' painting up close. The exhibit will be shown in the Ironwood Gallery and the Baldwin Education Building at the Arizona-Sonora Desert Museum from August 24 through October 27, 2013. -- CH

Opuntia basilaris
© Chris Bondante 2013
Fluid acrylic, watercolor, gouache, graphite

The flower cut in half lengthwise (longitudinal section) to reveal numerous male structures (stamens) which surround the single female structure (pistil)

The same longitudinal section cut to reveal additional structures: beneath the single pistil is the ovary containing the ovules which will develop into seeds

Further magnification of the developing ovules

My Prickly Friends

Cylindropuntia leptocaulis

Family: Cactaceae
Genus: Cylindropuntia
Species: leptocaulis (A. P. de Candolle) F. M. Knuth
Common Name: Christmas Cholla, Desert Christmas Cholla, Desert Christmas Cactus, Slender Stem Cactus, Tasajillo, Garrambullo

Habitat: Found in a variety of locations from several hundred feet to over 4,500 feet elevation. Frequently seen in valleys, along washes, bajadas, mesas, grasslands and hillsides in a variety of soil types and conditions.

Range: This cholla has a very wide range of distribution and is found within the Sonoran, Mojavean, and Chihuahuan deserts of north America. It is not just within those locations but is scattered throughout numerous areas in Arizona, New Mexico, Oklahoma, and Texas. It also occurs near sea level along the coast in southern Texas and in Mexico. Plants have also been reportedly found in other states but the populations may be extremely limited. Almost the entire northern portion of Mexico is also noted for being home to *Cylindropuntia leptocaulis*.

Description: Mostly seen as a small, sometimes inconspicuous species that may appear as a bush with a short trunk and featuring numerous very slender stems about the width of a drinking straw at about 3/16 of an inch in diameter and from 1 inch to over 15 inches or more in length. The stem color can be from an almost bright green to a waxy dull green (plant conditions and location can play a significant role in stem color and appearance). The spines can be an important feature and many plants may display a single spine, that is covered with a white or slightly golden sheath usually seen on newly produced stems. The spine length can be quite variable from .5 to 2 inches in length.

Size: Plant size can vary depending on the habitat. Plants found in areas where moisture is more plentiful or shade more prevalent may be up to 5 feet or more in height and over 3 to 4 feet in width. In contrast, those plants seen in drier locations can be very small and may be only about 12 to 24 inches in height.

Shape: Cylindrical Stem/Jointed

Flowers: In Arizona, flowering may begin at the end of April and can last through May but in other states the event may extend into late June. The light yellow to greenish yellow flowers are rather small and are from about .5 to .75 inches in diameter and they usually open and close for about 2 days. The small green fruit .5 to .75 inches in length and about .5 inch in width, matures rather slowly and will produce the small red berries that distinguish the common name, Christmas cholla. The bright red fruits may remain even throughout December and could eventually be consumed by birds or other animals.

Propagation: From stem segments or seed.

Care: Stem cuttings usually root quite easily and in only a few years a very nice plant can be a real gem. This cholla is a very hardy species that can survive numerous weather extremes and can do quite well in a climate that may be either dry or very humid.

Comments: The name “leptocaulis” refers to the small or slim stem size and it truly does have the smallest stem diameter of all the chollas found native to the United States. The thin stems and somewhat grasslike appearance of this cholla has been known to fool hikers into believing they are just passing through tall grass until they notice the gathering of spines and/or short glochids as they walk along. Because of the very wide-spread distribution, it has hybridized quite well with other chollas (too numerous to list) and one unique example is *Cylindropuntia leptocaulis x rammosissima*. It is a rather well defined hybrid that appears in parts of northwestern Arizona. Because of fear, this may be the most unwanted cholla by many, but it should be respected and given a choice garden location. Within time *Cylindropuntia leptocaulis* will certainly become an excellent prickly friend.

Botanical Art of The Sonoran Desert: Past and Present
August 24 - October 27, 2013

Arizona-Sonora Desert Museum Ironwood Gallery
You are invited to:
The Exhibit Reception
Saturday, 14 September 1 - 4pm

Contemporary Artists
- From juried portion of the exhibit:

Calochortus kennedyi
Desert mariposa lily
© Lynn Reves 2013, Watercolor

Datura wrightii, Sacred datura,
© Joyce Peters, 2010 Watercolor

Prosopis glandulosa – Post Mortem, Mesquite
After Death
Western Honey Mesquite
© Dorothy DePaulo, 2013
Colored Pencil on Drafting Film

From historical portion of the exhibit:

Eschscholzia californica
William Jackson Hooker, 1829
Hand-colored Copper Engraving

Agave ixtlioides
Walter Hood Fitch, 1871
Hand-colored Lithograph

Spanish Bayonet (Yucca baccata)
F. Muller, 1891
Wood Engraving

Yucca baccata
Pieter De Pannemaeker, 1873
Lithograph

Attention New Members and Novice "Cactologists"

You are invited to JOIN US to learn more about cactus. The **WONDER FULL WORLD OF CACTI** is series of beginner's workshops to enhance and enrich your knowledge and skills with our desert cacti and succulents. Presenters are TCSS experts selected for their amazing knowledge and skills and experiences to inspire your understanding and enjoyment of the arts and science of cacti and succulents. **Sign up today- space is limited!**

Sessions will be 90 minutes long with time to meet the fellow "novice or new members." Expect far more than a lecture- you will have experts thinking, and hands-on experiences with live cacti as learning tools. The workshop fee is $5 per session.

Deadline for REGISTRATION is September 10 2013 for our fall 2013 series. Space is limited... RSVP soon. Please send your check to Reserve a space, make payable to TCSS, mail to TCSS PO Box 64759 Tucson, AZ 85728-4759

FOR QUESTIONS: Contact Caryl Jones Education @ TucsonCactus.org or (520) 299-6813.

September 28, 2013 **9am - 10:30am**
Location: B&B Cactus Farm

Norm Dennis presents "Up Close with Cactus!"
Plant structures, functions, and adaptations to arid conditions. Come learn the basics of cactus and succulents.

Norm has a University degree in Botany and taught biology for 30 years. Started collecting cacti as a young lad in S Cal many years ago. He has a collection of cacti and succulents started as a teenager in the '50's. Currently interested in propagation, and the genera Mammillaria, Ferocactus, Echinocereus, Rebutia/Lobivia, Adenium, Agave. Always interested in helping newcomers.

October 26, 2013 **9am - 10:30am**
Location: McCormick/Jones home (directions on back)

Mark Dimmit presents " What's the Difference?"

Observing details is fascinating and essential. Cactus and Succulent identification, classification and nomenclature. What does a name tell us and why? Untangle to confusion!

Dr. Mark Dimmitt, renowned plant breeder, is well known for his knowledge of the flora and fauna of the Sonoran desert. He has retired from the Arizona-Sonora Desert Museum where he oversaw the Museum's education and scientific programs. As the Curator of Botany and our guest speaker his expertise in Desert ecology and horticulture can't be beat!

November 23, 2013 **9am - 10:30am**
Location: Bill Salisbury's home (directions on back)

Vonn Watkins presents " Let's Get Growing!"

Learn the basics of potting and planting cactus and succulents in natural and man-made habitats/gardens. And, the basics of successful survival of these plants.

Vonn's interest in cactus starting "growing" many years ago in N. Carolina. While earning his BFA in Tennessee he began propagating and growing cacti and other succulents from seed. His seed propagation techniques became very successful. Moving west, his interest in cactus grew too! Vonn joined TCSS and has been VP for over 10 years.

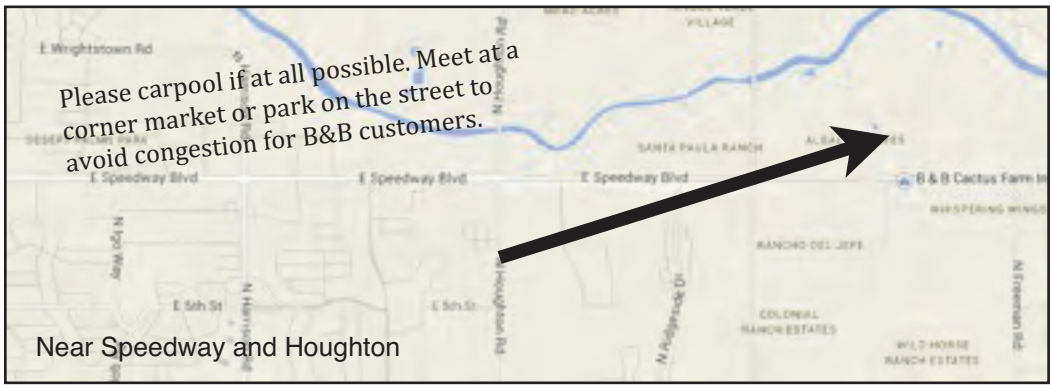
Deadline for REGISTRATION is September 10, 2013 for our fall 2013 series. Space is limited... RSVP soon. Please send your check to Reserve a space, make payable to TCSS and Mail to TCSS PO Box 64759 Tucson, AZ 85728-4759 by September 10, 2013

September 28, 2013

Speaker:
Norm Dennis- expect a great learning experience.

Location:
B&B Cactus Farm
11550 E. Speedway Blvd

Walk and Talk as you learn about cactus and succulents in a fabulous nursery with shade covers and open areas.



There will be seating for a portion of the workshop. Protection from rain/sun or cold is limited.
Refreshments, water, a handout and a "take it home surprise" will be provided.

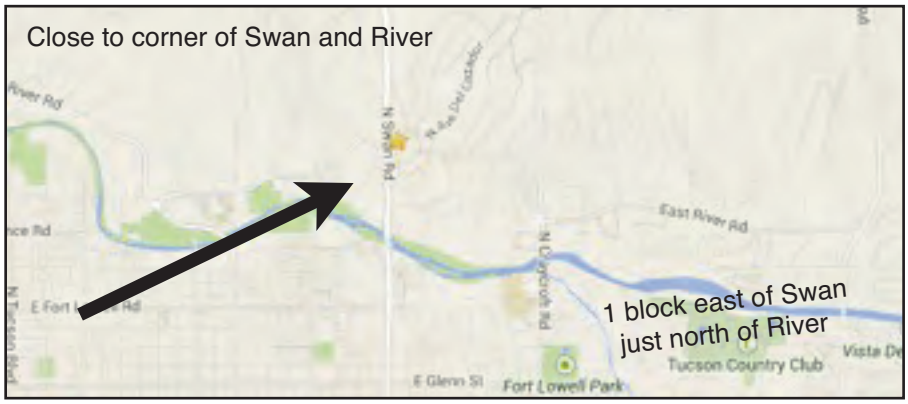
October 26, 2013

Speaker:
Mark Dimmitt- walk away making sense of our desert plant names.

Location:
Jones/McCormick home
4045 N Camino de Lupo

The main presentation will be on the patio or in the home. There will be a walking tour of the garden and shade houses. You can stay afterwards and explore water harvesting both commercial and home "grown."

There will be seating for the main part of the workshop with protection from rain/sun or cold. Refreshments, water, a handout and a "take it home surprise" will be provided.



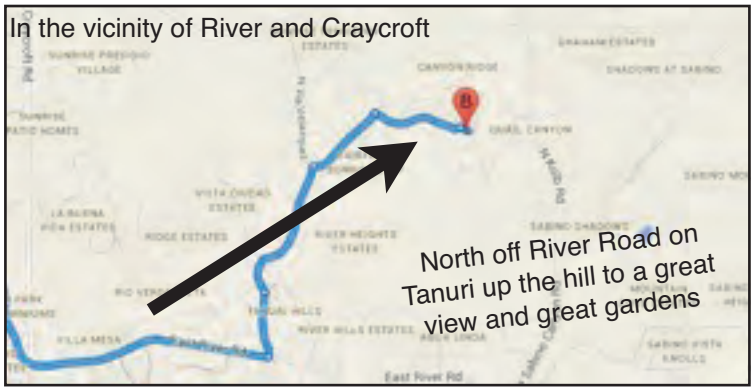
November 23, 2013

Speaker:
Vonn Watkins: your "growing expertise" will step up a notch with Vonn's guidance on techniques and needs for the cactus and succulents at your home.

Location:
Bill Salisbury's home
4450 N Trocha Alegre

The presentation will explore this important topic followed by a tour of Bill's wonderful gardens.

There will be seating for the workshop and protection from rain/sun or cold.
Refreshments, water, a handout and a "take it home surprise" will be provided.



Good Time Silent Auction

Sunday, September 15, 2013
Junior League Building • 2099 E. River Rd • 3:00pm to 5pm

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

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

Bid sheets and price stickers will be available at the September meeting, at the event and on our website for your convenience. The Board has adopted the same policy as we had at Sonoran IX with a high value special silent auction plants. These items will have an opening minimum bid of $20.00 or more set by the donor. 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. We will have a number of special plants and books, some are large, some are old and some are rare. Be sure you don't miss out.

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 will be available starting a 3:30pm in order to give everyone an opportunity to take some home. We will start the set-up at 1:00pm and the party will start at 3:00pm with the first silent auction ending at about 3:15pm and then about every 25 minutes there after. All you have to do is sign-in, get a bid number and then keep bidding until you hear **"PENCILS DOWN"**.

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. More information will be available at www.tucsoncactus.org or call (520) 256-2447.

GOOD TIMES SILENT AUCTION TENTATIVE SCHEDULE

3:00 pm - $2, $5, & $10 tables open, Ice Cream service starts
3:15 pm - Silent Auction #1 ends
3:30 pm – Free plant area opens
3:45 pm – Silent Auction #2 ends
4:05 pm – Silent Auction #3 ends
4:30 pm - Silent Auction # 4 (if necessary) ends
5:00 pm – All Good Time Events End

The BOOK BONANZA Is Coming!

50% OFF every book!

September 28, 9:00 – 1:00 TCSS MEMBERS ONLY

STONE & BLACKLIDGE
In front of Plants for the Southwest.
Parking on Blacklidge.

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Cactus Rescue
Cactus@TucsonCactus.org

Cactus Rescue: Chris Monrad/Joe Frannea

Education: Caryl Jones • caryljones13@mac.com
Free Plants: Donna Ellis • donna.ellis@mindspring.com
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Garden Tours: Bill Salisbury • tours@Tucsoncactus.org
Field Trips/tours Rob Romero/Joie Guinta
trips@Tucsoncactus.org

Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, September 19, 2013

TCSS Web Page:
www.tucsoncactus.org
Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

Everyone is Welcome!
Bring your friends, join in the fun and meet the cactus and succulent community.

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

September 2013

Thursday, September 5, 2013 7:00pm
Monthly Meeting, "Travels in Africa and Arabia X: The Greatest Hits from East Africa" Presented by Bob Webb and Toni Yocum, Arid Lands Greenhouses

Tuesday, September 9, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

Sunday, September 15, 2013, Junior League Building
Good Times Silent Auction
2099 E. River Rd, 3:00pm to 5:00pm (setup starts at 1 PM)

Saturday, September 28, 2013
The Bookshop Bonanza, 9:00am - 1:00pm
STONE & BLACKLIDGE
In front of Plants for the Southwest. Parking on Blacklidge.

September Meeting Refreshments

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

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society October 2013

Thursday, October 3, 2013 at 7:00 PM

"The Long Term Effects of Cattle Grazing on a Population of Carnegiea gigantea in Saguaro National Park

Presented by Elizabeth Krone, Instructional Professional, ASU, Polytechnic Campus

Livestock-grazing, in particular cattle grazing, is a common use of public and private lands in western North America. As a result, the effects of grazing on both plants and animals are widely studied. Few studies, however, look directly at the long-term effects that cattle grazing may have on a particular species. The goal of this experiment was to continue research that began in 1988, to determine if the effects of cattle grazing are still seen in the age structure of two populations of saguaros at Saguaro National Park - Rincon Mountain District (SNP-RMD). The null hypothesis stated that enough time has elapsed since the cessation of grazing, and there is no difference in the age distribution of the saguaros of the two populations. The study area was comprised of a former fence line where a 20 year difference in cessation of grazing occurred. Belt transects were laid on each side of the fence line and height was measured for each saguaro encountered in a transect. Approximate age of the individual was then calculated using an age-height correlation for SNP-RMD. Statistical analysis showed no difference between the age structure of the two populations. After 34 and 54 years rest from grazing, the negative effects of cattle grazing on the retention and recruitment of saguaro seedlings have ended, and replenishment of the populations is now dependent upon factors such as temperature and precipitation. Other factors such as climate change, increasing fire frequency, encroachment by invasive species, and poaching are sources of concern and increased mortality for these and other saguaros.

Elizabeth Krone received her Master in Science degree from Arizona State University in May 2013. Prior to this, she graduated from ASU with a Bachelor's in Conservation Biology in 2008. She grew up in Phoenix surrounded by the beauty of the Sonoran Desert, and has fallen in love with it over the years. When given the opportunity to study the saguaro for her thesis project, she gladly jumped on the chance to learn even more about this iconic species. Elizabeth has continued her association with ASU and now teaches general Biology labs at the Polytechnic campus in Mesa. When not spreading her love of Biology to her students, she enjoys hiking, camping, fishing, and many other outdoor activities. She also keeps busy at home with a 2 year old son, husband, cat, dog, two hens, and a couple of fish tanks.

Please welcome our guest, Elizabeth Krone to the October meeting event. The focus of the program should be of great interest to all of us who love and enjoy the saguaro. Also, be sure to enjoy lots of great food, win some beautiful plants and get your FREE plant at the conclusion.

TCSS Program Presentation
Thursday, November 7, 2013

"Madagascar 4"

Presented by Kelly Griffin

Our final program presentation for 2013 will be EXCELLENT! Be sure to reserve this Thursday evening and attend our final program for 2013! Come and welcome Kelly Griffin back to Tucson and enjoy this special evening!

President's Message

What a great September! Thanks to all that helped and participated in The Good Time Silent Auction. There were wonderful plants in the auction and on the $2 & $5 tables. The ice cream with all the topping was fabulous. The fastest thing in the west is the removal of free plants at this event. Congratulations to all for this successful event.

There were two weekend plant rescues attended by many of you. We rescued some of the fattest Saguaros I have seen in a long time and also 100s of Mammillaria Grahamii, hedgehogs and barrels. Many of these will be sold at our Plant Rescue Sale on October 6 from 9am to 11am. There are more details about this sale on our website.

We have just completed our first Book Bonanza Sale for members only and now will be opening the book sale to other. Watch your email and the newsletter for more information.

October is a great month for planting. Many of the Botanical Gardens will be having sales. I have listed a few that you might want to attend. Desert Botanical Garden (Phoenix) There is no admission charge to enter the Fall Plant Sale.

Members Preview Day (Become a member today!)
- Friday / October 11, 2013, 7:00a.m. - 5:00pm.
- Open to General Public
- Saturday, October 12, 2013, 7:00am - 5:00pm
- Sunday, October 13, 2013, 9:00am - 5:00pm

Boyce Thompson Arboretum (Superior)
October 11 - 27

October's a prime month for autumn landscaping; milder Fall temperatures help vulnerable transplants take root - and Boyce Thompson Arboretum (just 20 minutes drive east of Gold Canyon) has an expanded selection of drought-tolerant herbs, flowers, caci, succulents and trees available for purchase this month. BTA annual members save 20-percent on purchases during the opening weekend of this popular annual fundraiser -- which opens with the 'members-only' preview shopping Friday, when friends-of-the-Arboretum have first dibs on everything in stock. The sale opens to all Saturday the 12th, continuing daily through Oct. 27.

Fall Plant Sale: Featuring Arizona Blue-eyes
Wednesday, October 9, Members' Only
Preview, 12:00pm- 6:00pm
Saturday. October 12,, 9:00am - 5:00pm
Sunday, October 13, 10:00am - 4:00pm

Visit Tohono Chul's Fall Plant Sale to see the extensive offering of usual and unusual, native and arid-adapted plants from barrel cactus to gopher plants to penstemons and passion flowers.

Members' Only Preview hours will continue to be extended due to the ever-growing attendance and interest in this popular event. We encourage you to bring your own wagon, but we will have plenty on hand if you don't have one.Those planning to attend should enter from Northern Avenue on the east side of the Park.

Desert Survivors
Desert Survivors will hold its fall plant sale from Tuesday through Oct. 5, with 400 to 500 species of Sonoran Desert plants available at 10 percent discount.

Fall plant sale, Oct. 1-5, at Desert Survivors, 1020 W. Starr Pass. 8:00am to 5:00pm, Tuesday through Saturday.
Contact: 791-9309 or desertsurvivors.org

Also be sure to visit our member nurseries as they are important to us. Their information is on our website.

As this year is coming to a close we have 1109 members supporting our society. That's fantastic. I really appreciate your support and interest and hope that many of you will continue to be involved in our activities and also consider running for officer or board positions.

Thank you,

Dick Wiedhopf, President

TCSS 2013 Fall Desert Garden Tour October 12th, 9:00am to 3:00pm

October will hopefully bring cooler temperatures and enthusiasm for getting back into our garden projects. What better time to go on our TCSS Fall Desert Garden Tour to see how fellow members have used their passion for cactus and succulents to landscape their personal spaces. Always eclectic and fun, our member gardens on tour can give us new ideas and special tips that we can simply enjoy or take back to use in our own desert gardens.

These semi-annual tours are always free for TCSS members and their guests to enjoy. This time we have 5 member gardens and one cactus nursery who have generously agreed to open their gardens for our tour. Ranging from small spaces with abundant plantings to larger properties with rambling areas of unique creativity, there is something for everyone to love. Please join us on October 12th for this opportunity to see some special desert gardens on the far east side of Tucson

"What Is It?" SPECIAL IDENTIFICATION AT EACH MEETING

Our new "What is It?" table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our "What is It?" table and one of our fabulous members will identify it.

From the Florilegium

Tucked in among Mary Emily Eaton's watercolors in Britton and Rose's "The Cactaceae" (Vol. I, 1919) are the small yet remarkable paintings of Louis Charles Christopher Krieger. Fifty years passed before Krieger's work appeared again, this time with more prominent placement and recognition, in Lyman Benson's "The Native Cacti of California" (1969).

The subject of these unique paintings is the family Opuntia – the stems, joints, fruit, buds, and petals. While Krieger's botanical subjects were not particularly unusual, his painting method was quite distinctive.

In 1912 Krieger worked at the U.S. Department of Agriculture in Chico, California, at the Plant Introduction Garden whose director, David Griffiths, was studying the forage potential of prickly pear cacti. Griffiths had traveled extensively by motorcycle throughout the Southwest and Mexico where he collected and photographed some 6000 Opuntia specimens.

Without the benefit of color photography, Griffiths needed artists to prepare descriptive illustrations of his cacti, but as this work was primarily a government project, he also needed to avoid the time-consuming process involved with preparing botanical paintings. The solution was a process involving his vast collection of glass plate negatives whereby he would make very light photographic prints which Krieger would then paint with watercolor. This efficient method produced results that greatly enhance both the realism of the original photograph and the depth and form of the watercolor painting.

While Krieger is widely recognized for his excellent mycological paintings, these unusual and striking cacti paintings deserve wider exposure. The Florilegium Program's current exhibit, Botanical Art of the Sonoran Desert: Past and Present, includes five of L.C.C. Krieger's unique paintings that were generously loaned to the exhibit by the Desert Botanical Garden. The exhibit is being shown in the Ironwood Gallery and the Baldwin Education Building at the Arizona-Sonora Desert Museum through October 27, 2013. – CH

Watercolor tinted photographs by L.C.C. Krieger
Photographs of the artwork by Jeff Smith/Fotosmith, Tucson, AZ

Cylindropuntia leptocaulis

Opuntia fruit

Opuntia flower bud

Florilegium opens at the Arizona Sonora Desert Museum

Exhibit in the Ironwood Gallery, August 24 - October 27

Photos by Joie Giunta

DRIVING DIRECTIONS going from "A" to "F"
TCSS 2013 Fall Desert Garden Tour, Saturday, October 12th - 9am to 3pm

You may visit these desert gardens on this tour in any order that you wish.
Watch for our TCSS white boxes with GREEN flagging to help guide your way.

A- 10555 E Escalante Road -HOLCOMBE
This garden is located 0.3 miles east of the intersection of Escalante and Houghton Rd. Park along Escalante and walk up the drive to their home. (Limited inside parking available for those who cannot easily walk the drive). When you leave this garden go back west on Escalante to Houghton, turn right on Houghton and go 1.3 miles to Old Spanish Trail. Turn right. Go 0.7 miles to S Pedregal Dr., turn right and then take first left onto E Pinal Vis (portions unpaved). In 0.3 miles come to Ertman garden.

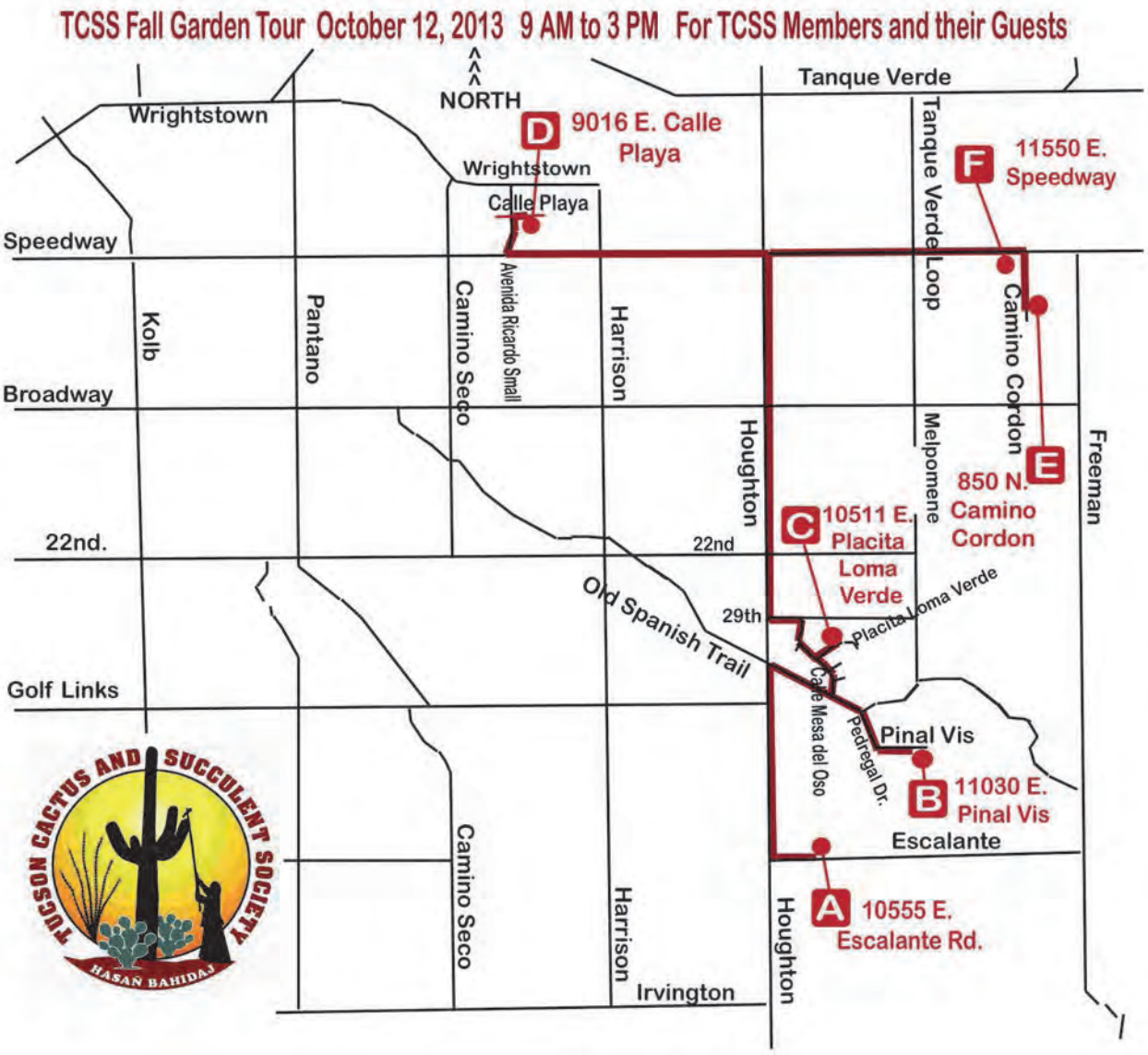
B- 11030 E Pinal Vis - ERTMAN
When you leave the Ertman garden, go back west to S Pedregal Dr. and turn right. Go to Old Spanish Trail and turn left. In 0.3 miles turn right onto S Calle Mesa del Oro. Take third right onto E Placita Loma Verde and drive 0.08 miles until you arrive at Hale garden.

C- 10511 E Placita Loma Verde - HALE
When you leave the Hale garden, go back to S Calle Mesa del Oso and turn right. Go 0.2 miles and turn left onto E 29th St. and drive to Houghton Rd.. Turn right and drive 2.5 miles to E Speedway Blvd. Turn left. Go west for 1.7 miles (past Harrison) and turn right onto N Avenida Ricardo Small. Drive 0.3 miles and turn right on E Calle Playa and drive until you arrive at Ellis garden.

D- 9016 E Calle Playa - ELLIS
When you leave the Ellis garden, go back west to Avenida Ricardo Small. Turn left and drive south back to Speedway. Turn left onto E Speedway Blvd., and drive 3.3 miles until you come to N. Camino Cordon. (You will go a short distance past B&B Cactus Farm for this garden and then come back to the nursery for your final stop). Turn right on N. Camino Cordon and drive 0.2 miles until you arrive at Keller garden.

E- 850 N Camino Cordon - KELLER
When you leave the Keller garden, go back north on Camino Cordon to Speedway. Turn left and go a very short distance to B&B Cactus Farm.

F-11550 E Speedway - B&B Cactus Farm



TCSS 2013 FALL DESERT GARDEN TOUR PARTICIPANTS … October 12th... 9am - 3pm

A -Bill & Margarete Holcombe: Whimsical features pop up at every turn in this extensive desert landscape. The beautiful burnt adobe home was renovated by the Holcombes and they have continued to add walls and many creative features to accent their large collection of in-ground and container plants. The brick work and vigas were meticulously set by their conscientious worker. Both the front and back yards have comfortable shaded sitting areas with lovely views, container plants, and garden art. The back has an Arizona Grape Vine Arbor and don't miss the colorful Agave stalks which offset the colorful patio furniture under the back patio overhang. Note Platyopuntia robusta, Grusonia bradtiana, Pinecone Tephrocactus, Rosemary "trees", Platyopuntia microdasys crest, Sansevieria.

B -Peter & Lynn Evers-Ertman: The Ertman home is built with a most striking fired brick patterned in various colors with fire clouds. The north side of Peter's 5.25 acreage is planted with rescue plants (Saguaro, Barrels, Jatropha) and free club plants along with assorted cacti and succulents. The east and south gardens have mature fruit, citrus, and nut trees. You won't want to miss the soothing creative Koi pond in the south yard or the handsome horses that share the property with the Ertmans. Note Yucca rigida, Texas ebony, Cleistocactus strausii, Mammillaria geminispina.

C -Janet & Johnny Hale: Natural vegetation surrounding the home including White-thorned acacia (Acacia constricta), Creosote (Larrea tridentata), and Desert Hackberry (Celtis reticulata). Don't miss the Giant Hackberry in the back yard. The front area's dominant plant is a South American Mesquite which provides cover for many Trichocereus, Aloes, Agaves, flowering plants amidst copper/chrysocolla rock work, garden art, and water features. The back area plantings are of Desert Museum Palo Verdes, the Giant Desert Hackberry along with *Casa Tortuga*, the Desert Tortoise sanctuary. A full compliment of cacti and succulents dominate the back area, their "Tricho Forest", graded mounds and rock-lined drainages, garden art, and a sitting patio near the Caesalpinia platyloba. The beautiful tile work near the indoor pool is Janet's creation. On the east side of the home along the wall are more Tortoise Sanctuaries. Note Pereskiopsis, Stetsonia coryne, Agave parryi var. truncata, Thelocactus herterochromus, Crested euphorbia.

D -Sandy & Paul Ellis: A welcoming streetside rock garden with plantings beneath a large Mesquite. Enjoy the *Wall of Fire Barrels* and meet *Potted Señor* who directs you to the back yard full of native and non-native flowering plants, a thick Trumpet Vine draped over an arbor, a colorful container of Portulaca, and many varieties of Adenium (80% of the plants winter over in the "glass house" or the "green room"). The temperature in the back yard must vary 5 to 8 degrees cooler from the front exposed area. The yard is jam-packed with delight, landscape and container plants galore, rambling Queen's Wreath Vine, a Crocodile and water plants in the bathtub. Note Sclerocactus uncinatus ssp. wrightii, Texas mountain laurel, Agave geminiflora, Euphorbia, Oreocereus celsianus

E -Ken Keller: Surrounding the home are mostly landscape natives, Foothills P.V. (Cercidium microphyllum) and Desert hackberry (Celtis reticulata), on his 3.3 acres. Neo-buxomia and other nice container plants on patio. The front drive entrance is planted with rescue plants (Nichol's hedgehogs, Ocotillo, barrels, Yuccas, Saguaro). Walking into the back yard gives an Old Hacienda feel created by vining plants covering the ramadas. The *Wall of Pots*, many hanging bird feeders, water features, yard art, and tinkling wind chimes lend a delightful feel to this garden. Enjoy his wonderful assortment of planting containers… but *watch out* for the sharks and crocs! Note Neobuxbaumia, Stetsonia coryne, Yucca baccata, Jojoba, Mexican crucillo

F -Mark & Margaret Sitter's B&B Cactus Farm: On your left, when entering this cactus & succulent mecca, you will discover a welcoming shady landscape with numerous notable specimen plants to enjoy along the peaceful wandering paths. Further into the nursery you will find greenhouses and outside areas packed full of almost every cactus and succulent available for our Sonoran Desert landscapes. A true wonderland for our botanical passions. Enjoy!

My Prickly Friends

Cylindropuntia ramosissima

Family: Cactaceae
Genus: Cylindropuntia
Species: ramosissima (Engelmann) F. M. Knuth
Common Name: Diamond Cholla, Branched Pencil Cholla, Tasajo

Habitat: Found in a number of locations across the southwestern deserts from as low as 100 to areas at or slightly above 4,000 feet elevation. The habitat includes open deserts, valleys, along water run-off areas, bajadas and rocky hillside slopes.

Range: The areas noted for the diamond cholla are those with less than 6 inches of annual rainfall. It can be seen in the southern corner of Nevada and southwards into extremely arid areas of the Mohave Desert in southern California and across parts of western lower Colorado River areas in Arizona, then extends as far east as Maricopa County. The range also moves south into Baja California and Sonora, Mexico.

Description: This species extends above the ground from a single or even a multiple trunk, and has numerous short stem segments that are a medium green to a nice blue-green in color. Often in many areas the actual trunk may sometimes be obscured by numerous lower branching stems. Each stem is patterned with a somewhat distinct diamond-shaped tubercle marking that can quickly identify this cholla. Stems are from about 2 to more than 4 inches in length and about 3/8 of an inch or more in diameter. Spines are very numerous on many plants (from 1 to 5 per areole) and newer ones near the top or apical area of the plant may be from 2 or more inches in length. Those spines may be cloaked in a nice sheath and the color can view as being brilliant silvery white to light tan or gold in appearance. There may also be plants found that are void of spines and this may be a somewhat rare occurrence in habitat.

Size: Plant size may be variable from about 2 to more than 6 feet in height and up to about 4 feet in width. The plant size may be limited depending on the actual habitat location, area weather conditions, etc.

Shape: Cylindrical Stem/Jointed

Flowers: Flowering begins in the later month of April or mostly in early May. The flower color can be described as being greenish yellow, light bronze, light peach or even with a somewhat pink tint (color may always be seen and described by many with careful variety). Flower size can be about .5 inches in diameter or a slight bit larger. The fruit is extremely spiny and can be seen as a cluster ball of white spines atop the plant. As time moves forward the fruit will mature and dry before falling from the plant.

Propagation: From stem segments or seed.

Care: Stem cuttings will root, but time is usually an issue. With extra moisture the process seems to work best. Make sure the segments are not stressed and in healthy condition. Be sure to watch cultivated plants closely as new growth and flowers may be a good indication of health. Those under cultivation may be a further challenge mainly because of the need to add adequate drainage, but it can be quite an achievement to finally succeed with having this special cholla in your garden.

Comments: The name “ramosissima” refers to the many stem segments and actually means, “most branched” or “many branched”. There are findings of hybridized plants and one good example is *Cylindropuntia leptocaulis x ramosissima*. It is a rather well defined hybrid that appears in parts of northwestern Arizona and the flowers can be a very pale yellow to almost white in color. *Cylindropuntia ramosissima* is probably the most distinct of chollas mainly by the appearance of the unique shape of the tubercles. This cholla may be hard to find at the local garden center but as more recent steps in diversity of species selection and demand increases, it may become a popular selection among those that favor its special beauty. This cholla can also survive the extremes of summer heat as well as very cold nights during the winter months. The “Diamond Cholla” is a very special plant that should be selected and treasured as a very special prickly friend.

Tucson Cactus and Succulent Society
Rescued Cactus Sale

WHEN: Sunday October 6, 2013, 9:00am to 11:00am

(we normally sell 95% of plants in the first 45 minutes, come early for the best selections)

We will be using our Limited Entry Number System for safety reasons and serving you better. Numbers will be handed out starting at 7:45 AM. See more details below. Note, a few of our Member Growers will be selling their plants from 8 AM to 10 AM under the mesquite trees so you can shop with them while waiting for our 9 AM Rescued Cactus Sale to open.

LOCATION:
Holding site, 4342 N. 4th Ave (from First Ave. and Wetmore, 4th Ave. is about 3 blocks west, turn south on 4th Ave., go about a half a block)

PAYMENT:
Cash, checks, charge cards, Visa & Mcard
(possibly Discover & Amex if swipe module works)

FREE:
Small bag of Mammillarias (pincushions) with each purchase.
LIMITS: One each type cactus per person (except Mamms and Cholla) for first 30 minutes or until all our customers have had their first choices.

RESCUED PLANTS FOR SALE (all are bare rooted):

Saguaros:
6” to 30” tall
(about 75 Saguaros @ approx. $1.50 to $2 per inch tall)

Saguaros:
36” to 60” tall
(about 22 fat Saguaros @ approx $2.75 per inch tall), figure 50 lbs./ft. tall.

Barrels:
6” to 28” tall
(about 90 Barrels @ approx $1.50 per inch tall or width)

Hedgehogs:
Single head to 15 heads (about 75 @ $4 to $20 each)

Mammillaria (pincushions):
15 heads/per bag @ $4.00, Multiple heads $2 to $12
(have hundreds of Mamms)

Cholla: 24” to 36” tall (about 20 @ $12 to @ $20)

No Ocotillo
(please buy local seed grown ocotillo for best results, large ones do not usually transplant well)

LIMITED ENTRY SYSTEM:
Numbers are handed out when your arrive. The first 20 customers are let into the sales area at 9 AM. We continue to let additional customers enter by their numbers as fast as we can handle addition customers. We normally can serve about 75 customers in 30 minutes. After everyone has entered and had their choice of plants, we remove all limits.

OTHER:
We load your vehicle, bring a heavy blanket or cardboard if you want the inside of your vehicle to have extra protection. We sell heavy gloves for $12/pair (not for cholla or prickly pear). We have free planting guides. We provide one piece 30% shade cloth per Saguaro or Barrel to help prevent sunburn in addition to you planting the cactus in the same orientation that it was growing (we mark our cactus with a white dot for south before they are dug). We only sell our cactus at announced TCSS sales. We can not ship nor make special arrangements to sell in between our sale dates. All our cactus are saved from road widening, pipelines and development sites where land is being cleared (we do not do developed residential cactus removal). We have sales once we accumulate enough cactus to have a sale so we can not tell you when the next sale will be.

THANKS FOR YOUR INTEREST AND SUPPORT OF OUR CACTUS RESCUE CREW PROGRAM!
Profits go to Activities, Education Outreach, Preservation, Conservation, Research and Pima Prickly Park Development. Our Cactus Rescue Crew has given 23,000 volunteer hours, saving over 66,000 cactus since 1999. We have spent $176,000 on State tags, worked 137 sites on 314 rescue trips covering 5,300 acres. TCSS Web: www.TucsonCactus.org (see our web site if you need a map to our sale site)
Email: TCSS@TucsonCactus.org

TCSS
FALL DESERT
GARDEN TOUR

Photos by ED BARTLETT

TCSS BOARD
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President: Richard Wiedhopf • president@Tucsoncactus.org
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(Ending Dec. 31, 2015)
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John Durham
Linda Heisley
Dale Johnson

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Bill Holcombe *(2013)*

Cactus Rescue
Cactus@TucsonCactus.org

Cactus Rescue: Chris Monrad/Joe Frannea

Education: Caryl Jones • caryljones13@mac.com
Free Plants: Donna Ellis • donna.ellis@mindspring.com
Floilegium: Margaret Pope • art@Tucsoncactus.org
Librarian: Joie Giunta • librarian@Tucsoncactus.org
Prickly Park: Jesse byrd (Implimentation)
park@Tucsoncactus.org
Programs: Vonn Watkins • programs@Tucsoncactus.org
Refreshments: Patsy Frannea • refreshments@Tucsoncactus.org
Technology: Open
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Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, October 24, 2013

TCSS Web Page:
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Webmaster: Keimpe Bronkhorst
For additional information call: (520) 256-2447

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6550 54
Cacti Rescued - Since 1999
312 Rescues - 22,602 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

October 2013

Thursday, October 3, 2013 7:00pm
Monthly Meeting, "The Long Term Effects of Cattle Grazing on a Population of Carnegiea gigantea in Saguaro National Park" Presented by Elizabeth Krone

Tuesday, October 8, 7:00pm, 2013
Board meeting at the U of A College of Pharmacy

Saturday October 12, 2013, 7:00am - 3:00pm
Fall 2013 TCSS Desert Garden Tour, 9 am to 3 pm. Five large, beautiful and very interesting gardens to tour.

"The Long Term Effects of Cattle Grazing on a Population of Carnegiea gigantea in Saguaro National Park

October Meeting Refreshments

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

Desert Breeze

Newsletter of the Tucson Cactus and Succulent Society November 2013

Thursday, November 7, 2013 at 7:00 PM

"Madagascar 4

Presented by Kelly Griffin

The program I will present will be from my most recent trips to Madagascar in October - November 2012 and July - August 2013 just a little over two months ago. On the 2012 trip we traveled the country with Brian Kemble and Jeremy Spath to look primarily for Aloes but of course that was just the tip of the iceberg. The most significant find was a very large population of the supposedly very rare Aloe suzannae. We found at the very least, hundreds of plants. In part, the importance of this find motivated me to return and study that population in more depth. Some of the research will be documented in the CSSA journal by Jeremy Spath but most revealing is that it contradicts several important reported points.

1.Despite the claims in several journals and on the internet that there are fewer than 5 plants left, They do still exist in Madagascar in large numbers and of course there is very little recruitment in this population and the current farming practices and lack of protection are likely going to doom this species eventually.

2.Despite a reported bloom time of October and November in the southern hemisphere habitat, the plants were found in newly dehiscing seed in late October. Hundreds of plants that had flowered but with no sign what so ever of flowers so it is not in flower in southern Madagascar in October and November as stated in the recent work on the Madagascar Aloes The Aloes of Madagascar.

3.Despite the reports of this plant being nocturnally flowering from Wikipedia and in the notable books by Reynolds, the Aloes of Tropical Africa and Madagascar and Aloes, the Definitive Guide. This does not appear to be exclusively the case. In Reynolds book, he anecdotally refers to some flowers that had been removed from the plant that had opened at night and closed during the day. The fact that they had been removed from the plant could account for this. There are no other flowering details given. Wikipedia and theThe Definitive Guide state that Aloe suzzanae is nocturnally flowering and perhaps pollenated by Bats and Lemurs without citation. The plants pictured herein where photographed mid day in habitat and show open flowers. In cultivation, they do indeed open during the day and are visited by bees.

4. While I can only slightly more than speculate as to pollinators, as I saw birds visiting the flower spikes and landing on them and I noticed that some seed had been parasatized by what appeared to be moth larva. I believe this plant is most likely bird and moth pollenated and certainly bat pollination is a possibility. Certainly a whitish flower color would be indicative of moth and/or bats. I think Lemur pollination sounds exciting but I doubt that this ever happens. Although I saw many lemurs in many different locations on this trip, I observed no Lemurs in the area where these plants grew.

More research to do and more details to come!

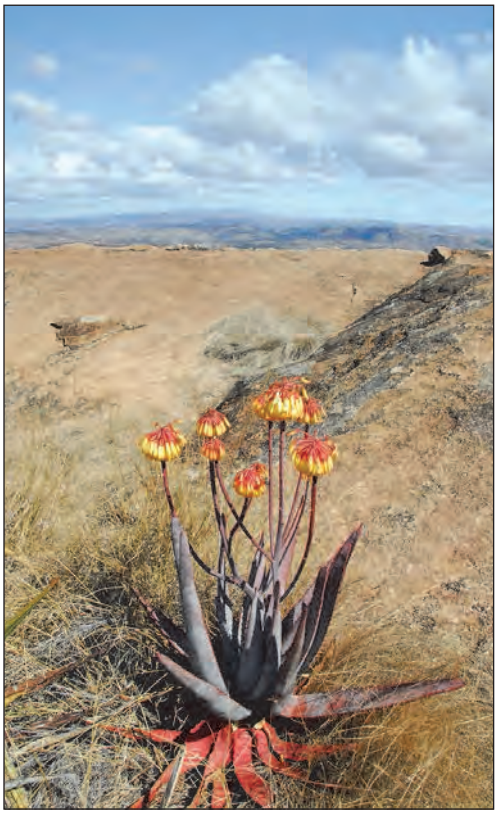
That was just part of the talk. We visited the Tsingy, limestone formations that are unworldly. The Pachypodiums on the second trip where in the best flower and form I have ever observed. The Aloe capitata were in full bloom as well also, notable were the Baobabs..... I will share what we saw and we saw a lot!

I have studied plants my whole life and I have had the great opportunity to travel to see so many of the worlds plants. Even so, there is so much to see. I currently work as plant development manager for a wonderful and well known company, Altman Plants based in Vista, Calif.

Please welcome Kelly Griffin back to Tucson and be sure to place this date on your to do list for the month of November! You don't want to miss this excellent program by one of the very best. This is the final program on the agenda for 2013 so be sure to attend and take a grand trip to Madagascar! We will also have some excellent plants for you to win as well as lots of good food, conversation, and yes, there will be free plants!

“Madagascar 4

Presented by Presented by Kelly Griffin



President’s Message

November 15, is a very important date. You won’t find much in the history books and if you google it, you’ll probably be disappointed as well. Tucson cactus and succulent hobbyist fear this date more than any other. It is the average date of the first FROST and it’s coming soon. This means a lot of work around the yard and a lot of moving of plants to protected areas. Brake out the space heater and the frost cloth! Close up the greenhouses-winter is coming! YIKES!

I look forward to November 16, when I can sit back and think there are only 5 months till April 15. No, not tax day but the last day of potential FROST for Tucson. YEA! But it is a hard road to travel. I know that every night when my wife uses her hair drier the heater in the greenhouse turns off. I’ve been meaning to fix it all summer but didn’t need the heaters in the summer. It has only been a problem for the last 15 years or so.

This is just a reminder that winter temperatures come quickly in the desert so be better prepared than me.

On a more pleasant note I want to thank the Home Tour Committee, all the volunteers and especially the Home Owners for allowing us to visit there yard and enjoy the fruit of their labor. Every garden offered something special to think about how to adapt this to my yard. These are real learning experiences and I am glad so many of you took advantage of this opportunity.

For the upcoming science nights and funfest we needed to put together about 1,000 “How to build a cactus” kits. Twenty (20) volunteers showed up on a Saturday morning and within 2 hours the task was completed. John Swarbrick and Joe Frannea had of the material prepared for the group and Caryl Jones our Educational Committee chair organized the volunteers and completed the task. Great job! Thanks to all.

In mid-November you will be receiving our big mailing. It will have a ballot and information about the candidates for office. There will be additional information about the Holiday Party, Annual Meeting and Gift exchange on December 8, 2013. Please fill out the handy Holiday Party RSVP form. Your personal membership renewal form will also be enclosed. You can extend your membership for any number of years or buy a life membership and never have to remember, “Did I renew”. For those of you whose membership already extends past December 31, 2013 the form will offer you an easy way to update any information that may not be current or is missing. This is really helpful in serving you. You can use the self-addressed envelope to enclose your extended membership, ballot and Holiday RSVP. It’s like one stop shopping.

Thank you,

Dick Wiedhopf, President

“What Is It?” SPECIAL IDENTIFICATION AT EACH MEETING

Our new “What is It?” table is catching on. If you have a mystery plant that you would like to know the name of, bring the plant or a photo to one of our monthly club meetings. Place it on our “What is It?” table and one of our fabulous members will identify it.

TCSS Nominations for 2014

The Board of Directors has approved a slate of nominees recommended by the nominations committee. At the November meeting, nominations from the floor for officers and board members will be accepted. Nominees from the floor need to either be present to approve their nomination or have given written approval to their nominator.

A ballot will be printed and sent out in mid-November to all current members with the holiday party reservations and membership renewal materials.

The nominees are:

President	Dick Wiedhopf
Vice President	Vonn Watkins
Secretary	Susan Durham
Treasurer	Linda Bartlett

Board of Directors (term ending December 31, 2016)
Peter Ertman
Val Little
Thomas Staudt
Cyndi Garrison

CSSA Affiliate Rep.
Bill Holcombe

Thank you on behalf of the nominations committee,

Dale Johnson
Bill Salisbury
Thomas Staudt

Thomas Staudt Bio

As a TCSS member since 2007 and a Board member the past three years I have been involved with cactus rescues, Pima Prickly Park activities, and have enjoyed hosting my yard for the home tours. While those activities continue my more recent TCSS involvement has centered on the nominations and by laws committees and working as editor for the upcoming TCSS Field Guide to the Cactus and Succulents of Arizona. I am looking forward to three more adventurous years on the Board.

Peter Ertman Bio

My interest in Cactus stems from the late 1970's when I moved from the DC area to Las Vegas. One fine spring day, I was out walking around in the Lake Mead area and saw my first Beavertail cactus in bloom. Considering my addition to bright colors (I grew a variety of highly colored roses before moving West), I was immediately hooked. At that time, I was a Geologist with the Bureau of Land Management, and whenever we had field inspections, I took some time to look for cactus. Some years later in the mid-1980's, I was responsible for permitting a very large gold mine in Imperial County, California. Prior to initial surface disturbance, we had the first (and to our knowledge the only) public cactus rescue on Federal lands over several weekends (over 250 permits were issued for cactus removal). Large numbers of mamillarias, barrels, etc are now alive in people's yards from that effort. To this day, I continue to be impressed by the hardiness of the cactus and the beauty of its blooms, considering the extreme conditions in the desert they grow in. I would be honored to be on the Board so I can, so to speak, give back to the cactus world some of the positive energy I have experienced from my interest in Cactus.

Sunday, December 8, 2013 • 3-5pm

Tucson Cactus and Succulent Society Holiday Party and Gift Exchange

Junior League Facility, 2099 East River Road
Setup: 1pm - 3pm • Dinner: 3pm -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 or more servings) Hot or Cold Salads -Starches - Vegetables - Desserts (please bring serving dish and serving utensils). For the last decade or so, we have been collecting money and/or food for the Community Food Bank. This year the need is much greater, so let's make it special for others. Please bring donations (cash donations are preferred, they can get 10 times the food) 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 the fun is how they will be distributed.

Meeting:
Additionally there will be a short Annual Meeting, Election Results, Awards and Table prizes. Please vote and/or RSVP on the notice you will be receiving in the mail by mid-November, and also placed in the December newsletter.

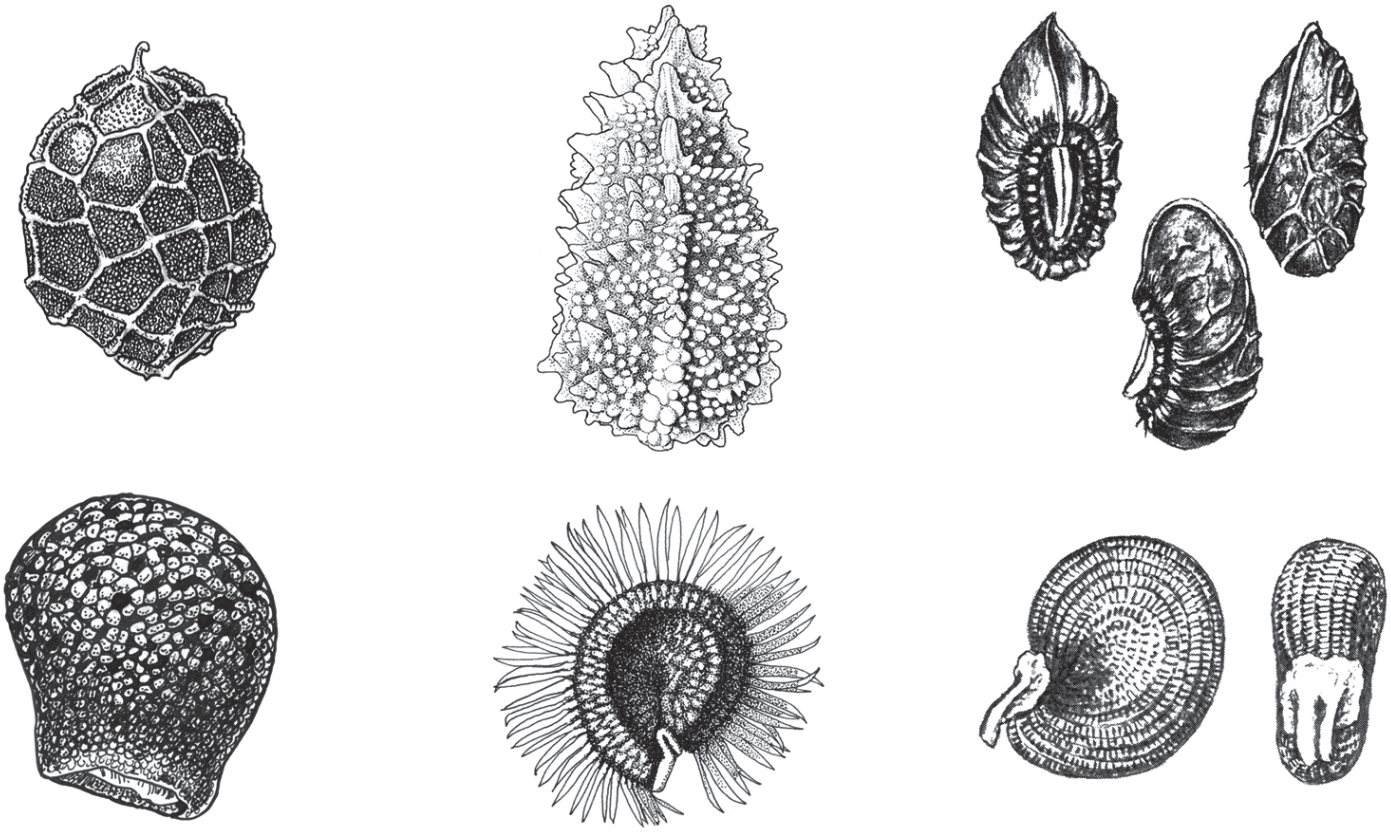
From the Florilegium

The noted botanical artist Regina Hughes explained in a 1987 interview that her drawings required enormous patience as "you must be exact to the last millimeter". Hughes is usually associated with her agave drawings (Gentry's "Agaves of Continental North America") or her orchid and bromeliad paintings, but over the course of her career she also became an expert in drawing seeds.

Most of of her seed drawings can be found in the 1977 USDA publication," Economically Important Foreign Weeds", a hefty manual which was used at the time by the U.S. Customs Department. Nearly all of her 6000 drawings for the book were of seeds (she also wrote the descriptions of the book's 1200 species). Despite the countless hours spent looking at seeds through her microscope, she said that she found them endlessly fascinating.

The UA Herbarium's collection of botanical illustrations includes hundreds of such painstakingly prepared drawings by Hughes and Lucretia Hamilton. Adding to their legacy of intricately detailed drawings are works by Matt Johnson, several of which were included in the Florilegium's recent exhibit.

It can be a challenge to appreciate all of the detail in their marvelous drawings, and the drawing of a seed can easily be overlooked when surrounded by larger plant structures. Here is a selection of drawings that shows how much detail goes into accurately depicting the tiny seed. – CH



Lucretia Breazeale Hamilton

Eschscholzia californica (top)

Echinocereus leucanthus (bottom)

Matthew B. Johnson

Amsinckia intermedia var. *chinata* (top)

Portulaca johnstoni (bottom)

Regina Olsen Hughes

Nonea pulla (top)

Calandrinia polyandra (bottom)

My Prickly Friends

Cylindropuntia whipplei

Family: Cactaceae
Genus: Cylindropuntia
Species: whipplei (Engelmann & Bigelow) F. M. Knuth
Common Name: Whipple's Cholla, Plateau Cholla, Rat-Tail Cactus, Clokey Cholla, Whipple's Cactus,

Habitat: Whipple's cholla is found in the higher locations from around 4,000 to to more than 7,500 feet in elevation. This plant favors rich to very course soils in valleys, open grasslands, Juniper-Pinyon Woodlands and Sagebrush area locations.

Range: Distribution can be rather widespread through the upland hillsides in southeastern Nevada, southern Utah, the southwestern parts of Colorado, the western and northern corners of New Mexico and extends into Arizona where it is found in many areas within Mohave, Apache, Yavapai, Coconino and Navajo counties. Range locations in areas other than those listed above could be questionable.

Description: *Cylindropuntia whipplei* is a rather distinct cholla, and the short stems can be easily recognized by extending from 1 to more than 6 inches in length and are .5 to over .75 inches in diameter. Prominent tubercles help display the white or very light tan spines that can number from about 4 to more than 10. The longest spine can vary in length from about .5 to over 1.5 inches in length. Spines are sheathed and are not heavily barbed.

Size: Commonly seen in habitat to be about 2 feet in height but can also be found in certain locations to extend to more than 6 feet tall. This is a very bushy cholla and can be displayed with having a very tight structure. Mat forming plants may be seen to show a wide display that can be as much as 5 feet or more in diameter in some areas.

Shape: Cylindrical Stem/Jointed

Flowers: This cholla always has a yellow to somewhat greenish yellow flower and a prime time for viewing the display is May and June. Slight variation in flower color may be noted especially when seen during the late afternoon but most plants of this species usually show the distinct colors noted above. Flower size can be from about .75 to about 1.5 inches in diameter. The fruit usually turns yellow when ripe and can remain on the plant for quite some time before it dries and then drops to the ground.

Propagation: From stem segments or seed.

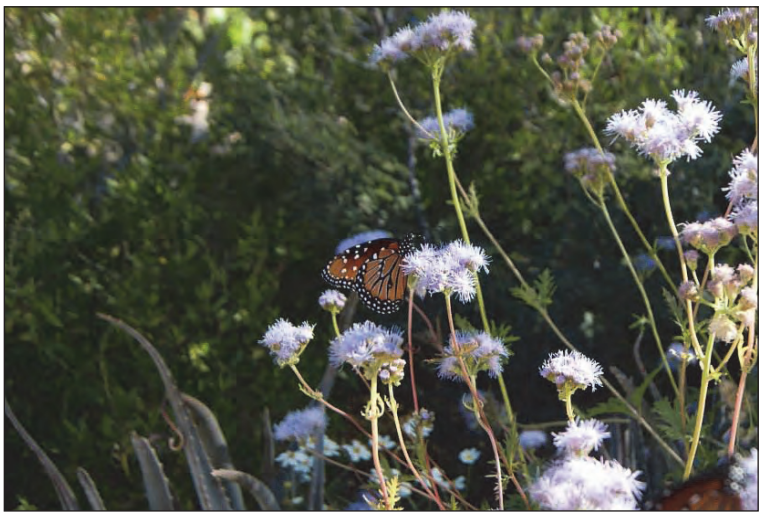
Care: This is an adaptable cholla for many landscapes across the country. It may be found in only those nurseries that are quite diversified in their plant offerings. *Cylindropuntia whipplei* is still considered to be an ideal plant for care as it is very easily maintained and requires very little attention. It may be best to provide a slightly richer soil mixture for areas that are extremely dry during most of the year. Extra water may also be necessary to add to a healthier plant. It also is an extremely hardy cholla that can survive –20° Fahrenheit in habitat.

Comments: *Cylindropuntia whipplei* is one of the most amazing chollas. Many could care less about this plant but it is truly one of the chollas you will always admire if placed in the garden. It is a highly adaptable cholla that can endure a huge variety of extreme conditions. As a plant that will survive extremes it can easily be grown in many areas throughout the United States and also in other locations in a number of other countries. The roots of Whipple's cholla were reported to have been used medicinally by the Hopi Indian tribe of northeastern Arizona. Another plant, *Cylindropuntia multigeniculata* was believed to be a hybrid form of *Cylindropuntia whipplei* and *Cylindropuntia echinocarpa,* but some experts may believe otherwise. The name "whipplei" actually came from Army Lieutenant Amiel Whipple who was survey leader for the Pacific Railroad during the discovery. John Bigelow and George Engelmann then named the new species after Lieutenant Whipple. Make a new friend by celebrating and growing *Cylindropuntia whipplei*! This plant will certainly love to be in your garden.

Fall Garden Tour

Photos by John Durham

The Oct 12 Garden Tour was a success with many compliments about the 5 gardens. The Garden Tour Committee of: Ed Bartlett, Patsy Frannea, Nancy Reid, Robeert Ellis, Marija and Rim Talet-Kelpsa and Bill Salisbury want to thank the over 30 volunteers and the garden owners for all their hard work that made this tour a success. Over 140 members and guests enjoyed the beautiful gardens and fine weather. The next tour will be in April 2014.



TCSS Field Guide to Arizona Cactus and Succulents

As you may know, the TCSS book project is in the works. The TCSS Field Guide to Arizona Cactus and Succulents is an important updated treatment of the taxonomy, distribution and status of these Arizona native plants and the first comprehensive undertaking of the subject in 30 years. The team of contributing writers, editors and support staff, all TCSS members, are providing all the documentation, photography and artwork featured in the book. Scheduled for release in early 2015, this publication embodies the TCSS charter of education and conservation.

Now is an opportunity to help support this outstanding publication with your donation. As we all know, botanical publications can be expensive, so to keep this book affordable and available to everyone, we need your financial support. Consider the expertise and experience of the authors, the quality of the photography and artwork, along with the dedication of the production group when you make your decision. As TCSS members, you will be making a contribution to a project that, not only promotes the TCSS, but also will stand as an important reference for years to come.

Donor levels start at $100 and each donor will receive a copy of the book with their name in print.

Make all donations payable to TCSS.

Opunita Level	$100	Peniocereus Level	$2500
Agave Level	$500	Saguaro Level	$5000
Ferocactus Level	$1000	Crested Saguaro	$10,000

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Editor: Karen Keller runbunny@cox.net
Deadline for copy: Thursday, November 21, 2013

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Tuesday November 12, 2013 at 7 pm
Board meeting at the U of A College of Pharmacy

Saturday November 30, 2013
9 am - 11 am
Book Bonanza Sale (Holiday book shopping) for TCSS members; the general public is welcome as well.

November Meeting Refreshments

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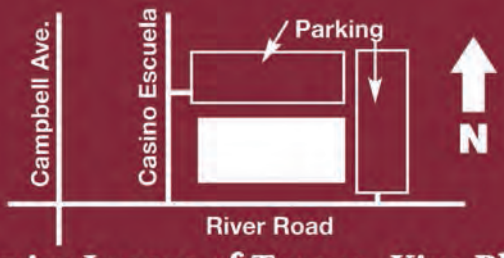
Meetings are held on the first Thursday of each month.



Junior League of Tucson, Kiva Bldg.
2099 E. River Road

Desert Breeze
Newsletter of the Tucson Cactus and Succulent Society December 2013

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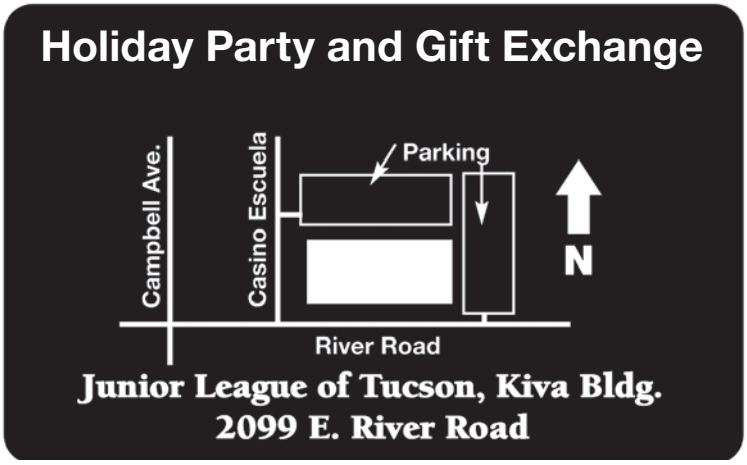

President's Message

It is time to celebrate another great year and the people who have contributed to making it so. The officers and Board members have done an outstanding job in leading this society and inspiring new ideas and activities.

"TCSS Field Guide to Arizona Cactus and Succulents" is well on its way to publication in early 2015. This is a tremendous undertaking and the support from all of you is overwhelming. This is just another great achievement by the society. I am so proud of the group of members who are involved in this project.

We just finished our first group of novice programs instituted by Caryl Jones our Education Chairperson. I know those who attended were very pleased and learned a great deal. We will continue to provide programs like these not only for the novice members but expand the scope to others who might want to learn more.

As all of you know by now, we received the entire inventory of Rainbow Gardens Bookshop from Helen & Kevin Barber. This is a fabulous gift to the Society with no strings attached. Many of you have taken advantage to obtain great books and journals at very reasonable prices. Helen and Kevin have done so much for this society besides the bookstore donation and it is impossible to thank them enough.

Our Rescue Program still captures the interest and enthusiasm of our members and is our best recruiting tool. We have well over 1100 members this year and we could set a record for membership. When we started this program in 1999, none of us would have dreamed that we could save over 66,000 cacti and succulent plants. There is nothing more I can say, that number says it all. Joe and Patsy Frannea made it possible to expand the program, provide the technology and continued leadership to keep it at a high level for the past dozen or so years. The behind the scenes work that they do is unbelievable and really appreciated by those of us who know how hard and how much time they have dedicated to make the Rescue Program great.

Have you been to Pima Prickly Park this year? Step by step it is reaching the goals we dream about. The Pima County Native Plant Nursery is just about complete. This adds a whole new look to the area and we are excited about the future. When we have a work day at the Park you need to be there. Getting our hands dirty and filled with spines is what we are all about. My wife always says, are you going out there to play in the dirt with your friends? Yep! There are some dedicated members who volunteer at the park on a regular basis and they deserve our thanks and support.

I hope you had a wonderful Thanksgiving and a Happy Hanukkah, and look forward to a Joyous Christmas and a Happy New Year.

I hope many of you will attend our Holiday Party. Check out the mailings and newsletter articles about this event

Thank you,

Dick Wiedhopf, President

PS: The dates for Sonoran X conflict with Easter. I take full responsibility for this oversight and along with the Board, we will work on adjustments for the event to avoid this conflict

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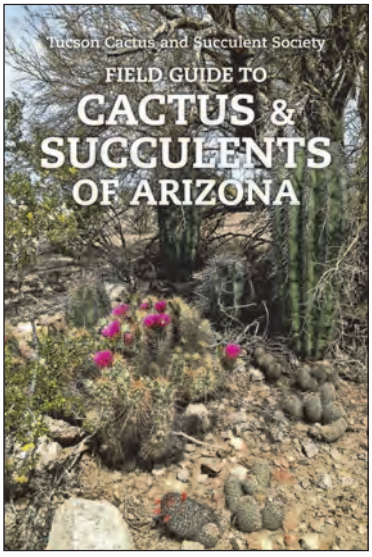
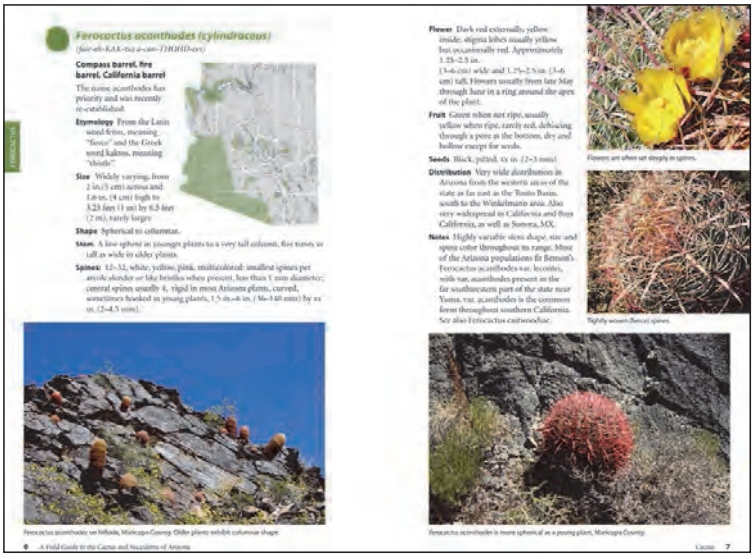
TCSS Field Guide to Arizona Cactus and Succulents

As you may know, the TCSS book project is in the works. The TCSS Field Guide to Arizona Cactus and Succulents is an important updated treatment of the taxonomy, distribution and status of these Arizona native plants and the first comprehensive undertaking of the subject in 30 years. The team of contributing writers, editors and support staff, all TCSS members, are providing all the documentation, photography and artwork featured in the book. Scheduled for release in early 2015, this publication embodies the TCSS charter of education and conservation.

Now is an opportunity to help support this outstanding publication with your donation. As we all know, botanical publications can be expensive, so to keep this book affordable and available to everyone, we need your financial support. Consider the expertise and experience of the authors, the quality of the photography and artwork, along with the dedication of the production group when you make your decision. As CSSA affiliate members, you will be making a contribution to a project that, not only promotes education and conservation, but also will stand as an important reference for years to come.





Donor levels start at $100 and each donor will receive a copy of the book and their name in print.

Make all donations payable to TCSS.

Opuntia Level	$100
Mammillaria Level	$500
Ferocactus Level	$1000
Peniocereus Level	$2500
Saguaro Level	$5000

THE END OF THE SUCCULENT SAFARI

Bob Webb and Toni Yocum

Our first trip to Kenya in December 2003, which also was our first trip to Africa, was arranged to see Aloes, Euphorbias, and wildlife in habitat. We wanted to see the "real" Africa, but the only thing we knew about the country was what we had read in tour books. You never know what a place is really like until you go there. Perceptions and misconceptions factor into travel anywhere, and East Africa is no exception. Kenya is a poor country, and visitors on the safari circuit are largely sheltered from ordinary people and that poverty. Most tourists encounter black Africans as hotel staff, drivers, or actors in staged, "visit the natives" commercial settings. Many Americans picture Africans wearing loin cloths while heaving spears at elephants; most Africans think Americans are either rich or movie stars and that Indians still roam the plains, shooting arrows at passing stagecoaches. Our story is about the kindness of strangers, ordinary Kenyans, and ultimately their entrepreneurial spirit.

Most of our trip, led by Len Newton, consisted of six tourists, a safari vehicle and driver, and a tour operator named Vivian, who performed most of the logistics. Len is a professor with Kenyatta University in Nairobi, an extremely nice man and Kenya's expert on succulent plants. Vivian's idea of travel was focused on the tourist circuit of wildlife parks and fancy hotels costing more than $100 per night, and she never seemed to get the concept that we came to Africa to look at plants. A white Kenyan, she lives in Karen, an affluent southern suburb of Nairobi, and Len lives on the campus of Kenyatta University northeast of the city.

After a couple weeks of as a group, staying in safari hotels, and traveling along the tourist circuit, we said goodbye to our fellow travelers to spend a few days with our new friend Len and to get away from Vivian's influence. We didn't tell her where we were going, and she would have been horrified if she knew. We had an 11 PM flight on New Year's Eve from Nairobi back to Arizona. We left most of our luggage at Vivian's house and had to return by about 4 PM on New Year's Eve for sufficient time to clean up, repack our bags, and comfortably catch our flight.

The three of us left Nairobi in Len's old Land Rover on December 30. We were headed west across the Rift Valley to some succulent-plant localities Len knew about near Narok. Narok is on the road to Masai Mara National Park and is about 150 kilometers west of Nairobi. That road contains the absolutely worst stretch of "roadway" that we encountered in Kenya, approximately 15 km of continuous potholes where pavement once occurred. Kamara, one of our Kenyan drivers, cynically told us that the reason the road to the country's premier wildlife park wasn't fixed was because the local politician held the flight concession to the Masai Mara. Indeed, air traffic to and from the Mara is quite high, as is the level of cynicism towards politicians in Kenya. Few tourists would want to deliberately take that road, although safari vehicles commonly traversed it.

On December 30, we stayed at the Transit Hotel in Narok, which had no running water and sporadic electricity, but we only spent 1400 shillings (about $15) for bed and breakfast for all three of us. We started the next day looking at the Chambai Hotel, where for only 1550 shillings (about $18), a couple can have bed and breakfast at a nice but non-Vivian hotel. We headed east back towards Nairobi on what we expected to be a relaxing day of looking at Euphorbias and Aloes before packing to go home. We stopped at a place where Len had previously seen a hybrid swarm of Aloes and found a lot of other succulents there as well. We spent a fine morning of walking around in the bush and photographing perhaps 10-15 succulents, and the hybrids were really interesting. We left, heading east on that really bad section of road.

At 11 AM, just as we passed a road crew, the universal joint on Len's Land Rover broke without warning. As commonly occurs in Kenya, our breakdown was in the middle of the road, which was where we stayed, and the traffic just went around us, spraying clouds of dust. We inspected the problem, joined by a helpful member of the road crew. I crawled beneath the Land Rover with this man, who only spoke Swahili, a language Len does not speak. We tried to tie the drive shaft up with bailing wire so it didn't bang on the bottom of the vehicle, but that didn't work. This universal joint links the transfer case to the front wheels, meaning that theoretically we still should have had rear-wheel drive. However, somehow we no longer had a clutch. Later, Len's mechanic found that a simple pin in the transmission had been displaced by the flapping drive shaft, but we couldn't fix that even if we knew about it. All we had were two screwdrivers, a pair of pliers, and an adjustable spanner.

We made whatever makeshift repairs we thought might work, while each passing bus or safari vehicle showered us with sand and dust. Occasionally, a driver cursed us in Swahili, but as a stalled vehicle in the middle of the road is a common feature of Kenyan traffic, most drivers slowed to see if they could help. Two computer repairmen traveling from Narok to Nairobi in a small pickup truck stopped to offer assistance. They spoke some English, although they were difficult to understand. They offered to tow us, but we had no rope. They took Len west, back towards Narok, to purchase some. After two hours of head scratching, the computer repairmen and our group tried to tow our vehicle using sisal rope enhanced with nylon cord. None of us thought this would work, and sure enough, we went about 20 meters before the cord broke. At least now the vehicle was on the side of the road.

Len was frustrated about his vehicle's reliability and apologized for putting us into this position. I told him an old joke about British vehicles: "Why can't the British make toilets that work? Answer: because they can't figure out how to make them leak oil!" That was particularly funny because few of the toilets in Kenya actually work the way they were designed. The last time his Land Rover broke down in the bush, Len was with another Tucsonan, so it is clear that allowing Tucsonans to ride in his vehicle is a very bad thing.

The computer repairmen were extremely kind and helpful. They offered to take me to hire a recovery vehicle (aka, a tow truck). They think a recovery vehicle could be hired in Suswa, the largest town on this road in the Rift Valley. I went with them in a small pickup truck, heading east, and I'm now covered with dirt and grease. Len estimated that I would be back in an hour, and he and Toni stayed with the stranded vehicle, still bathed in clouds of dust in the tropical heat.

The two computer repairmen and I go screaming down that bad road headed east. Seatbelts? You must be joking. The driver, who was as large as I am, said something in barely coherent English about being fast but safe, and he stomped on the brakes and the accelerator equally hard and frequently while swerving around the potholes. The second guy was relatively small, quiet, and nicely dressed, and his tie was laying on the dashboard. The three of us were crammed into the front seat of this small pickup, bouncing violently through the bad sections, then racing when the surface became mostly pavement. I had a death grip on the door frame, periodically flexing my hands to relieve the tension. You are more likely to die in an automobile accident in Kenya than in a terrorist attack, and they don't tell you that in the guidebooks.

On their way home to Nairobi, the computer repair guys wanted to shop for their families in the Rift Valley. At the little town of Olasiti, we stopped for potatoes. I talked to the smaller guy, who bought me a warm coke. He explained that they stayed at the Chambai Hotel the previous night after fixing the Narok bank's main computer. The driver came back with a sack of cabbages but no potatoes, so we again we speed down the road headed east. At Suswa, we stopped at a large open-air Maasai market, and the driver ran off looking for potatoes. Many Maasai were there on market day, and they swarmed around us in their traditional dress. Earlier in the trip, I had said something derogatory about 5-star hotels, finishing with a statement about "wanting to blend in" while in foreign countries. Well, standing there among the Maasai wearing a baseball cap, t-shirt, and shorts, I certainly wasn't blending in. The small guy explained that things are so much cheaper out here in the bush that it is worth it to stop and shop. They already had 4-5 bags of charcoal, the standard cooking fuel in Kenya and the primary reason for deforestation in East Africa, in the bed of the truck. Our driver returned with perhaps 10 kg of potatoes and reports that the nearest recovery vehicle is still to the east at the main highway between Nairobi and Uganda.

We drove onward at maximum speed east on the better road, arriving at the junction with the truck route to Nairobi, where a little town with no apparent name had sprung up. The junction is at the base of the Eastern Escarpment of the Rift Valley, and the highway east of here climbs more than 1000 m up to Nairobi. We immediately found a recovery vehicle, a battered old Toyota Land Cruiser, near the petrol station. I gave the computer repairmen a thousand shilling note for their help and I gave the recovery vehicle operator another thousand shillings for petrol. Within 10 minutes, we're headed west, while the computer repairmen kept a careful watch to make sure I was OK.

The recovery-vehicle driver, with two other companions, was really friendly but didn't speak much English. I couldn't figure out why three guys were needed for this operation, but oh well let's go. Headed west, the only words I understood over the engine noise (no muffler) was "dangerous potholes," but I already knew that. In the cab at my feet was an antifreeze jug, a 5-liter plastic bottle with a tube coming out of the top. We stopped in Suswa, where I learned that the antifreeze jug was the vehicle petrol tank, and we needed more fuel. The driver bought a soda, drank it quickly, cut the bottle in half to create a funnel, and started to transfer petrol from a 16-liter container into this one while smoking a cigarette. Petrol is spilling all over the back of the truck, and I'm was backing up quickly fearing an imminent explosion, but instead they decided to change gas tanks and put the 16-liter bottle into the cab. OK, whatever works, and we continued west into the hilly terrain on the west side of the Rift Valley, with me sitting next to that erstwhile fuel tank.

We had to pull over because the truck was overheating on small upgrades. They got out and dumped water over the engine block while releasing pressure on the radiator. One of them said "so many problems" and I'm now thinking I'm involved in a two-vehicle rescue, not just one. The driver didn't seem to understand the distance to Len's vehicle. He kept asking me where it was in gestures and broken English, and I kept saying "10-15 km." At a point when I'm certain we were just two hills away from the breakdown site, the vehicle overheated and stalled on a low hill. After dumping nearly all our remaining water over the engine block, the starter didn't work so they roll-started the vehicle backwards down the hill. That was the last time I remember them turning off the engine on the recovery vehicle. Moving westward, the driver announced that we'd gone 70 km, his maximum limit, and I told him that we needed to go over one more hill. Fortunately, I was right and we reached the Land Rover with Len and Toni inside, 71 km from the main road to Nairobi.

It was now 4 PM, the time we were expected back at Vivian's house, and our group was reunited 120 km west of Nairobi. Len and Toni had been harassed for 3 hours by a Maasai brat pestering them with the "sweetie, sweetie!" call while reaching into the vehicle for any valuable he might grab. At one point, this obnoxious kid tried to grab Toni's wedding ring. Len threatened the kid with his steering-wheel lock and they had rolled up the windows despite the tropical heat. Toni had been worried sick that I had been robbed and left for dead somewhere. Needless to say, she and Len were extremely relieved that help had arrived. I chased off the Maasai pest, who melted into the bush when he saw four more men on the scene. Upon inspection of the recovery vehicle, Toni and Len noticed something I hadn't: the tires on the recovery vehicle were bald.

The recovery-vehicle operators sized up the situation, hooked up the tow bar, and borrowed spanners from passing lorries to remove the non-functional drive shaft. I now realized why there were three of them with us: one came to steer the Land Rover, another was a mechanic, and the third was the recovery vehicle driver. It became apparent that we were being helped by some extremely competent people. As yet we had no clue as to the extent of that help, and the fact that none of us spoke Swahili and they spoke little English created an interesting evening of communication.

It was 5:15 PM when we started eastward under tow, again on that horrible road. We had no phone to call Vivian and tell her why we were late. After an excruciating trip through the bad potholes, we reached the relatively good road and were making reasonable time. I wondered to myself whether the Land Rover, swerving back and forth under tow, could flip over if we left the pavement, and if it did would the recovery vehicle go over with it? At Olasiti, we stopped to dump more water over the engine block. At Suswa, they took another thousand of my shillings to get another antifreeze jug full of petrol, pumped out of a 55-gallon drum. Toni and I assessed the low probability of getting on our flight, and Len repeatedly made and revised plans about what would happen when we reached the main highway. We arrived there about 7 PM, 50 km from Vivian's house.

Now things got really interesting. Len offered to stay with his vehicle and get us a taxi or a matatu, but the petrol-station owner offered to tow us to Nairobi using the same recovery vehicle. After a short period of negotiation, we headed up the Escarpment with three Africans in the recovery vehicle, another steering the Land Rover, and Len, Bob, and Toni extremely dubious that this erstwhile "vehicle" would make it up that steep road. It was 7:15 PM, and we knew that Vivian was probably going ballistic, but there was no phone to let her know we were coming.

Time passed really slowly while traveling at 5 km/hr and wondering if we were going to catch a flight now less than 4 hours from departure. We became one of those slow, non-roadworthy vehicles that had plagued our previous driver on the tourist circuit. Every now and then, a stream of lorries and cars passed us going up that steep hill with no passing lane; fortunately, I didn't notice any close calls with on-coming traffic as was common on the same road east of Nairobi. We got a real good look at the succulents on the beautiful hillslope of the Eastern Escarpment, and we stopped at a little stream to get water to cool the engine. We had plenty of time to review possible scenarios, and the stress level (and my blood pressure) steadily increased.

Right as the last sunlight hit us, we crested the Escarpment. Now we see that there was only one functioning taillight on the recovery vehicle and its headlights were aimed at amazingly weird angles. The only part of this vehicle that seems to work as originally designed was the rotating yellow light on the top of the cab. Len's plan, which Toni and I readily agreed to, was to find a hotel near the Westlands Shopping Mall (the one recently attacked by Al-Shebab terrorists), call Vivian, and hire a ride to the airport. Len would continue under tow to Kenyatta University where he had money to pay for the tow. We're making good time on the main divided highway and things were looking good, it is now 8 PM, and we're on the outskirts of Nairobi.

Nairobi is a sprawling place of more than 2 million residents, a million of whom live in the Kibera slum, the 2nd largest shanty town in Africa. Everyone repeatedly told us: "Don't drive at night in Nairobi!" or at any time through Kibera. Because of rampant crime, no one trusts strangers, and carjackings are common. We saw our first chances to catch a matatu to the airport. Matatus are Kenya's answer to mass transit: they are minivans that carry 15-20 passengers crammed in like clowns in a VW bug, and they don't obey traffic laws. Speed bumps are ubiquitous near Kenyan schools and pedestrian areas, largely in a vain attempt to slow matatus down; instead, they just go airborne over the speed bumps and do not have functioning shock absorbers. The government always seems to be cracking down on matatus, and police checkpoints were common to check for licensing and roadworthiness. Most Kenyans had a cynical attitude about this, believing that the police use this as another opportunity to extract bribes while letting the offending vehicles go without requiring repairs or documentation.

We arrived at the first police checkpoint, which consisted of two sets of spikes placed such that drivers needed to make a slow z-turn to avoid puncturing their tires. Our erstwhile vehicle barely made it through. The police immediately waved over our obviously non-roadworthy vehicle. The petrol-station owner got out, waved his arms frantically while pointing at us, but the policemen seemed to ignore him. We didn't see money exchange hands in the darkness, but after about 5 minutes we're underway again. At a second checkpoint, the police miraculously let us pass.

We suddenly take an unexpected right turn off the main highway, and a mid-road conference took place in the darkness. The petrol-station operator knew we needed to go to Karen and Vivian's house, and he wanted to be our taxi driver. Completely amazed, we agreed. It was after dark on New Year's Eve, and we did something that everyone told us not to do: drive at night through the heart of the Kibera slum, with its open sewers and ramshackle buildings theoretically filled with people who wanted to rob us. We went over speed bumps, through pot holes, and around various rough places under tow and through throngs of New Year's Eve revelers while feeling completely out of control. Two missed turns meant they had to back the joined vehicles up and turn around in traffic with people milling all around. The yellow flashing light on the recovery vehicle made the people and buildings seem eerie and ominous in the darkness. We didn't see one telephone, but we did see signs to Karen. Len moved to the cab and guided the driver to Vivian's house. We pulled into her yard at 9:15 PM.

In our absence, Vivian had a full-on meltdown, because she definitely was no longer in control of logistics. She had called everyone from Kenyatta University to British Airways while emailing repeatedly to our friends in Tucson. What they could do for us 10,000 miles away was seriously questionable. She had 5 hours to worry and build up a head of steam. She met us in the yard, yelling something like "I've been worried sick!" and offered to run us a bath. While that would be nice, we had no time. We ran into the house, grabbed our baggage, and threw it into Vivian's more modern Land Cruiser. Kamara, the ever-reliable driver, was ready to go, and Toni and I jumped in. We barely said goodbye to Len before screaming down the road towards the airport. Vivian had alerted British Airways, who informed her that 10 PM was the latest time we could get to the airport and still make the flight. It is 9:30, and the airport was supposed to be a half hour away.

Toni and I were filthy, and we took turns changing clothes and repacking our bags in the back while explaining what happened to the normally staid Kamara. He was driving so fast and laughing so hard that at one point we were afraid he was going to crash in the darkened streets filled with people. He had some derogatory comments about Land Rovers -- and why should we disagree at this point? -- and pulled up to the departure lounge at 9:45 PM. Kamara got us a baggage trolley, then disappeared into the crowd. We went through three sets of metal detectors and x-ray machines, got our boarding passes with only minutes to spare, and were checked by a BA employee who Vivian had alerted of our late arrival. As I passed through the last check point, I noticed that the airline clerk looked at my passport twice, studying my face. When I got on the plane and found a mirror, my face had streaks of grease, my hair was matted, I hadn't shaved in three days, and I was covered with dirt. At least my eyes, which had been bulging out of my head for most of the last 6 hours, had finally sunk back into their sockets. Just the right conditions for 30 hours of international air travel. Helpful travel tip not in the guidebooks: you can wash your hair in an airplane lavatory.

So that is how Toni and Bob's first Succulent Safari to Kenya ended. We learned a huge amount about succulent plants in habitat, but what we learned most is that you should trust the

people who want to help you. Len is fond of saying "WAWA" from his days in Ghana, meaning "West Africa Wins Again." We need a new acronym for East Africa. Toni and I went to Kenya for adventure, and Kenya didn't want to let us go. It took four years, but we returned to Kenya in 2007 and have repeatedly done so since, travelling with Len, staying in cheap hotels, and never using a tour operator.

Postscript 1: We returned to Tucson on the day that the US government, in its infinite wisdom, had "intelligence" that suggested that British Airways flights from London to Washington were going to be hijacked. That explains why, after being X-rayed and searched about 10 times, an idiotic security guy in London Heathrow decided to confiscate our manicure kit and two hemostats. We're sure world security was better knowing that we could not trim our fingernails or pull spines from our hands on airplanes. Signs of Progress: fingernail clippers are again allowed on aircraft. Get yours at your local Homeland Security Office, we're sure they have plenty available.

Postscript 2: Len left the Land Rover at Vivian's house and the recovery vehicle operators took him to Kenyatta University. A slow trip across Nairobi ensued, punctuated with another stop at the petrol station, and Len arrived at his office at 11 PM, a full 12 hours after the breakdown. He paid them 30,000 shillings, or about $400, for our extraction from the Rift Valley! That's got to be more than the recovery vehicle was worth, but they did tow us 120 km on New Year's Eve without damaging his vehicle. The next day, Len's mechanic quickly repaired the Land Rover.

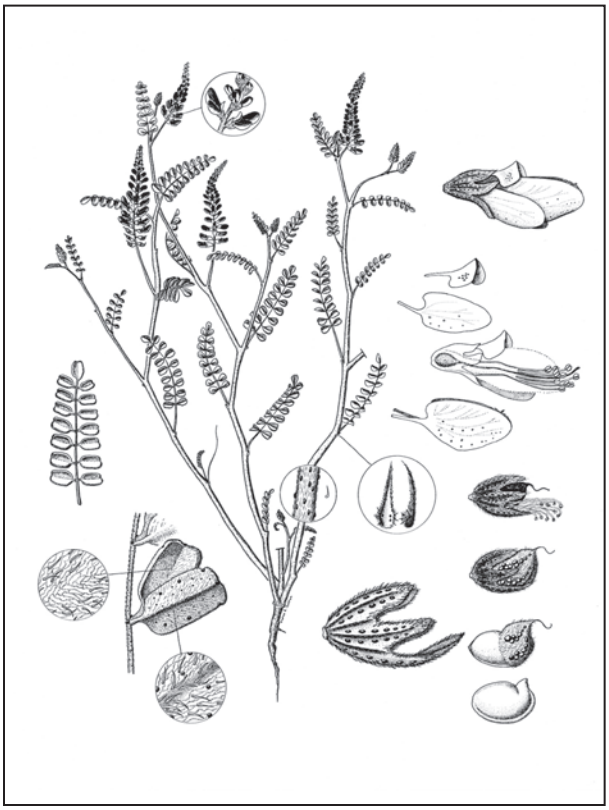
Postscript 3: Len sold that Land Rover to his mechanic and bought a Toyota Rav4, and we destroyed the engine on that vehicle before abandoning it in southern Tanzania in 2011. In January 2013, we rented that same Land Rover from the mechanic and got our East African Driver's Merit Badge by driving it into Tanzania, returning through the heart of downtown Nairobi. That Land Rover is actually a pretty good vehicle, even when Tucsonans drive it. But that is another story.

From the Florilegium

The two botanical illustrations shown here are by Phoenix artist Susan Ashton, one of the artists contributing to the Legumes of Arizona project. The first thing that you notice when looking at Susan's work is her meticulous organization of all the many botanical components necessary to fully describe the plant.

Preparing a botanical plate entails drawing a number of separate elements, including a representation of the habit (the overall growth form of the plant), basic vegetative structures, and details (usually magnified) of the reproductive structures in their various stages of development. Any distinguishing features that will aid in identifying the plant are also important to include. Condensing so much information into a small format is no easy task, and when it is done as artistically as Susan has done, the viewer, whether botanist or layperson, can truly enjoy delving into the minutiae of the plant.

Susan's background includes a B.A. in Anthropology/ Archaeology and a professional career as curator at two historical museums in the Northeast. She developed proficiency with pen and ink while cataloging museum collections and at the same time taught herself medieval calligraphy and illumination. Botanical illustration is an obvious fit for her abilities, and not long after moving to Arizona, Susan completed a Certificate in Botanical Art and Illustration at the Desert Botanical Garden in Phoenix. In addition to her work with the Legumes of Arizona project, she is one of several artists who are documenting rare or threatened plants of the Grand Canyon. More of her work, including works completed for the Grand Canyon Project, can be seen at her website (www. sashtonart.com).



Marina parryi, Parry's false prairie-clover© Susan Ashton 2012 Pen and Ink

Fouquieria columnaris, Boojum © Susan Ashton 2013 Watercolor

Acknowledgement of Contributions

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

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Pima Prickly Park

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Cacti Rescued - Since 1999
317 Rescues - 22,817 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

December 2013

Sunday, December 8, 2013 3:00pm - 5:00pm
Tucson Cactus and Succulent Society
Holiday Party and Gift Exchange
Junior League Facility, 2099 E. River Road

Tuesday, December 10, 2013 at 7:00pm
Board meeting at the U of A College of Pharmacy

CSSA Journal

Dan Mahr begins this extra-large issue with an extra-long article, setting the scene for the CSSA fieldtrip to northwestern Argentina. He introduces the vegetational types of the region, then gives an overview of the numerous species seen at the 96 plant stops made during the 14-day, 3000 km trip–everything from mighty Trichocereus to diminutive Yavia.. Dr Guillermo Rivera, who served both as tour guide and operator, next illustrates the often unrealized variability of plants in habitat, and advises caution when rushing to create new species without first carefully researching and understanding the plants variability over their entire range and populations. Opuntia sulphurea, increasingly seen in cultivation with wonderfully curled spines, is the subject of Judy Pigue's article, the culmination of several years' desire to see the plant in its natural habitat. Bromeliads are widely distributed in South America, and Nels Christianson provides an in-depth guide to the various species encountered, often in dramatic settings, during the group's travels. Nels also penned a poem inspired by the plants and animals seen during his time in the field. Root Gorelick draws our attention to an easily overlooked genus, Pterocactus. These very cryptic plants were seen at a number of localities on the trip. Dick Schreiber, a frequent visitor to desert habitats, provides a participants-eye view of a day in the field. Clearly, these are not all heat, sweat and dust. Finally, another CSSA field trip stalwart, Rick Gillman, tackles the genus Gymnocalycium, which must be one of the most diverse of the cactus genera in the area.