**Desert Breeze**

*Newsletter of the Tucson Cactus and Succulent Society*  
**October 2016**

**October Meeting**

**Thursday, October 6, 2016 at 7:00PM**

"**History and Evolution of the Sonoran Desert**"  
Presented by Thomas R. Van Devender

**Tuesday, October 11, 2016 7:00pm**

Board meeting at the U of A College of Pharmacy

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**October 2016**

Thursday, October 6, 2016 7:00pm  
"**History and Evolution of the Sonoran Desert**"  
Presented by Thomas R. Van Devender

Many of the adaptations in desert animals evolved in response to new extreme condition of light, heat, and aridity in dry topoc forests that first appeared in the middle Eocene (40 mya), long before the deserts of North America existed. The uplift of the Sierra Madre Occidental in the late Oligocene—early Miocene (25-15 mya) caused many important changes. Tropical forests were no longer present coast-to-coast. Biotic communities were segregated out in elevational zones alone elevational gradients of rainfall and temperature for the first time. New vegetation types dominated by oaks and pines appeared on mountain tops. Immigration of new groups from Eurasia had dramatic impacts on the biota, including the replacement of primitive boas by colubrid, viperid, and elapid snakes, which radiated throughout North America. New species evolved on mountaintops, with more primitive ones persisting in tropical lowlands. Evolutionary radiations in plants established the Asteraceae, Fabaceae, and Poaceae as fl oristic dominants. In the middle Miocene, a drying trend changed tropical deciduous forests isolated northwest of the Sierra Madre Occidental first to thornscrub, then to desertscrub as the Sonoran Desert formed (8 mya). At the same time, the land that is now Baja California split from mainland Mexico and began moving to the northwest in splendid evolutionary isolation. The uplift of the Sierra Nevada a million years ago formed the Mohave Desert, the youngest North American desert.

In the Pleistocene, changes in global climates restricted the Sonoran Desert to the lowest areas along the Colorado River and in central Sonora and southern Baja California for 80-90%

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**TCSS BOARD**

*Officers*  
President: Richard Weidhopf • president@Tucsoncactus.org  
Vice President: Vonn Watkins • vp@Tucsoncactus.org  
Treasurer: Linda Bartlett • treasurer@Tucsoncactus.org  
Secretary: Susan Durham • secretary@Tucsoncactus.org  
Librarian: Donna Ellis • plants@Tucsoncactus.org  
TCSS Affiliate Rep: Bill Holcombe (2016)

**Board of Directors:**  
board@Tucsoncactus.org

*Terms expire December 31 of year indicated*  
- Keimpe Bronkhorst (2018)
- Peter Erman (2016)
- Vonn Watkins (2016)
- Val Littke (2016)
- Donna Ellis (2017)
- Linda Heisley (2017)
- Noe Mayotte (2017)
- Bill Salisbury (2017)
- Caryl Jones (2017)
- Linda Heisley (2018)
- Dale Johnson (2018)

**Site@TucsonCactus.org**

**Meeting Location**

TCSS Monthly Meeting Location

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

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**November Program Presentation**

Haworthias and Gasterias  
Presented by Dr. Robert Webb and Toni Yokum

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**Free Plants**

Donna Ellis • plants@Tucsoncactus.org

**Board meeting at the U of A College of Pharmacy**

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**October Meeting Refreshments**

Those with family names beginning with A- G, please bring your choice of refreshments to the meeting. Your generous sharing will be greatly appreciated and enjoyed!
Theodor R. Van Devender was the Senior Research Scientist at the Arizona–Sonora Desert Museum for 25 years, where he conducted research on a broad range of natural history topics. He has published well over a hundred publications on a range of topics, including natural history, paleoecology, desert grasslands, desert tortoise ecology, local floras, ethnobotany, herpetofaunas and the Madrean Archipelago. Tom is interested in the natural history of many areas in Sonora, especially the Madrean the Sky Island mountain ranges, the la Frontera zone within 100 km of the Arizona border, the Yecora area in the Sierra Madre Occidental, and tropical deciduous forest in the Alamos area.

In May 2015, he began as the Director of Biodiversity Programs at GreaterGood.org, where he organized biodiversity inventories to Sonoran Sky Islands in the Madrean Discovery Expeditions (MDE) program and manage the Predator Conservation Program. From 2009 to 2014, he was the Manager of the Madrean Archipelago Biodiversity Assessment (MABA) project at Sky Island Alliance. MABA documented the diversity of animals and plants in the 32 isolated Sky Island ranges and complexes in Sonora, Mexico. These biological records and high-resolution images are available to support conservation activities in the region. Tom organized twelve binational expeditions with large volunteer groups of taxonomic specialists, land managers, college professors and students, local residents, photographers, and journalists to make new observations in high-diversity areas in Sky Island ranges in Sonora. The MABA (Madrean.org) and the new MDE (MadreANDiscovery.org) databases are the best sources of biological records in the Madrean Archipelago.

If you want to know more about the Sonoran Desert, please attend this excellent program presented by a truly remarkable person. You will enjoy lots of excellent refreshments, win some great plants and go home with a free plant provided by the TCSS.

President’s Message

It’s the last quarter of the year and we have more than 1120 members in TCSS. WOW! Before you know it the year will be over but there is still a lot of activities happening. The 2nd edition of the “Field Guide” will be going to press in the next week or so. The price will remain the same. There are some new photos, a new species is included and maps have been updated. We are all but sold out of the first edition (2,500).

The Good Times Silent Auction was outstanding. Thank you to everyone who brought plants, pots etc. There were some wonderful items and everyone really enjoyed the afternoon especially the ice cream, prickly pear sorbet and all the topping. As usual, great volunteers helped in making everything go smoothly.

We still have 100 or more barrel cacti available at our sales area plus the potential of several rescues before the end of the month so we will be having a Halloween Barrel Sale. Come early and help us decorate some “cactus creatures.” We are planning on Sunday, October 30. Watch your emails for more information.

Designing the Ferocactus garden at Pima Prickly Park has been a lot of fun and was a lot of work. The plants were rescued from Tucson International Airport as ground was cleared for a solar parking project. We ended up with 10 sotols, a couple of Hesperaloes, one Ocotillo & some grasses. Dick Wiedhoff drove a 26 ft. truck to the park. The size of the plants make an immediate WOW presence. Now that the weather is becoming more hospitable for a walk in the park…come and see first hand the new plantings …and enjoy Saguarohenge! ----Cari Wright


WHAT’S HAPPENING?

Linda Heisey shared Pima Prickly Park’s newest additions: “The plants were rescued from Tucson International Airport as ground was cleared for a solar parking project. We ended up with 10 sotols, a couple of Hesperaloes, one Ocotillo & some grasses. Dick Wiedhoff drove a 26 ft. truck to the park. The size of the plants make an immediate WOW presence. Now that the weather is becoming more hospitable for a walk in the park…come and see first hand the new plantings …and enjoy Saguarohenge!” —Cari Wright

Nomination for Board of Directors Members and Officers

The Board of Directors has elected the following individuals to the nominating committee. They are Teresa Curtis: waferdog@gmail.com, Peter Ertman: pgde00@gmail.com, Dale Johnson: andd4@gmail.com, and Bill Salisbury: chinagoracing38@comcast.net.

The purpose of the nominating committee is to insure there are at least one candidate for every open position.

You are encouraged to consider running for any of the open offices. You may nominate yourself by contacting one of the members of the nominating committee or you may nominate another individual that you would like to see serve in one of the positions.

At the November meeting a list of candidates will be presented to the meeting and also in the newsletter from the Nominations Committee. Nominations from the floor will be accepted as long as the nominee is present or has submitted that they will accept a nomination. Once all nominations are approved, a written ballot will be sent to every current individual membership and two ballots to every current family membership. Results of the election will be announced at the Holiday Party on December 4, 2016.

This mailing will also include membership renewals and Holiday Party reservations. A Self-addressed envelope will be included for your convenience.

The following Officers (2 year terms) and Board of Directors (3 year terms) end December 31, 2016.

President: Richard Wiedhoff
Vice-President: Vonn Watkins
Secretary: Susan Durham
Treasurer: Linda Bartlett
Board of Director Members: Teresa Curtis, Peter Ertman, Caryn Jones, Val Little

Thank you for your support.
REMEMBER

Holiday Party and Gift Exchange

There will not be a meeting on Thursday December 1, 2016, our traditional Holiday Celebration will occur on Sunday December 4, 2016 at our Sky Islands school locatin. The Society supplies the entrees, place setting and drinks, and you supply your favorite Salad, Vegetable, Starch or Desert to share with other members.

We have a gift exchange (value at least $10) of plants or related garden items. They need to be wrapped so that recipients can’t identify them when they make their selection. If you bring a gift, you get a gift.

Additionally, there will be a short Annual Meeting, Election results, Awards and Table dish gardens created by Doug Rowsell, and other plants to be given away.

More information and reservations information will be in the next newsletter and mailed to every member.

Your family is always welcome.

Timelapse of Echinopsis Scarlet O’hara

There is a time lapse video of my Echinopsis Scarlet O’hara blooming, and provided by Greg Krehel who spoke to the club a few months ago and shared some fabulous videos.

This is an offset from one of Harry Johnson’s Paramount Hybrids purchased at his nursery in the mid 50’s. It’s been outdoors in Tucson ever since and survived temps from 17 F (with cover) to 117 F. The parent plant now has offspring on both coasts, Solana Beach, CA and Jacksonville, FL.


Bill Thornton

A Very Special Trip

Succulents of Coastal Sonora

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

**TCSS Halloween Barrel Sale**  
Sunday October 30, 8:00am to 10:00am  
No limit on Barrels.  
4342 North 4th Avenue

**Desert Botanical Gardens - Phoenix**  
October 14, 2016 - October 16, 2016  
Members' Preview:  
Friday, Oct 14 | 7 a.m.-5 p.m.  
Open to General Public:  
Saturday, Oct. 15 | 7 a.m.-5 p.m.  
Sunday, Oct. 16 | 7 a.m.-3 p.m.  
Events Plaza Parking Lot  
No admission charge to enter Plant Sale

**Boycy Thompson Arboerum - Superior**  
WHAT: Annual Plant Sale October 7 - 23, 2016  
WHERE: Boyce Thompson Arboretum is a 320-acre Arizona State Park located at highway 60 milepost #223 near the historic copper mining town of Superior, just 45 miles due east of Mesa or about 90 minutes drive northeast of Tucson via Oracle Road to highway 79 north to highway 60 east  
WHEN: The sale continues daily between business hours from 8:00 a.m. to 5:00 p.m. through Sunday, October 23  
HOW MUCH: $10 adult admission ($5 ages 5-12) to enter the grounds, even if the visit is simply to buy plants during the plant sale event. **Please note that admission is waived for all University of Arizona faculty, staff and students who bring their CatCard or another valid UA identification**

**Tohono Chul Park**  
Fall Plant Sale – Members Only Preview at Propagation Area, East Side of grounds  
Oct 12 @ 12:00 pm - 6:00 pm  
Oct 15 @ 8:00 am - 5:00 pm - Open to public  
October 16, 2016 @ 10:00 am - 4:00 pm - Open to public  
Visit Tohono Chul's Fall Plant Sale for an extensive offering of both the typical and the unusual, native, cold-hardy, and arid-adapted plants from agaves to Zauschneria and everything in between. Our Members' Only Preview hours have been extended due to the ever-growing popularity of this event. We encourage you to bring your own wagon, but we will have plenty on hand if you don't have one. Don't forget to check out our propagation greenhouse. In the propagation greenhouse there will be a special selection of aloes like the Ghost Aloe.

**Arizona Sonora Desert Museum** - Sorry this has passed

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This is an offset from one of Harry Johnson’s Paramount Hybrids purchased at his nursery in the mid 50’s. It’s been outdoors in Tucson ever since and survived temps from 17 F (with cover) to 117 F. The parent plant now has offspring on both coasts, Solana Beach, CA and Jacksonville, FL.  

**Day 1 Tucson-Pinacate-Puerto Peñasco-Puerto Libertad**  
**Tentative itinerary:**  
Day 1 Tucson-Pinacate-Puerto Peñasco-Puerto Libertad  
Sights: Organpipe NM pass through, Pinacate Visitor Center, Lophocereus schottii dunes, coastal drive  
Lodging: Puerto Libertad  
**Description:**  
- Guides Ana Lilia Reina-G. & Tom Van Devender (yecora4@comcast.net)  
- 7 day trip: March 17-23, 2017. February 15 registration deadline  
- Limited participation (18-20)  
- Your personal high-clearance vehicles - participants need own car and personal insurance  
- Free zone – no car permits or visas  
- Participants pay for own food and lodging (6 nights) - plus guide fees for 7 days at $560/person  
- Fouquierias (4): columnaris, diguetii, macdougalii, splendens  
- Cylindracea (6): Carnegiea gigantea, Lophocereus schottii, Pachycereus pectin-aboriginum, P. pringlei, Stenocereus alamosanus, S. thurberi  
- Gulf of California views  
- Outdoors in Tucson ever since and survived temps from 17 F (with cover) to 117 F. The parent plant now has offspring on both coasts, Solana Beach, CA and Jacksonville, FL.

**Day 2 Punto Cirio-Puerto Libertad**  
Lodging: Puerto Libertad  
**Description:**  
- Sights: boojum trees, cardón forest, sand dunes, Gulf of California views

**Day 3 Puerto Libertad-Bahia de Kino**  
Lodging: Bahia de Kino  
**Description:**  
- Sights: coastal travel with two or three rich succulent desertschrub stops. Lodging: Bahia de Kino

**Day 4 Bahia de Kino-San Carlos**  
Lodging: San Carlos  
**Description:**  
- Sights: giant cardón forest, Fouqueria digueti dunes, sunset from Mirador.

**Day 5 San Carlos**  
**Description:**  
- Sights: morning beach walk?, Nacapule palm canyon, Mirador view of Gulf, seafood, boat ride?

**Day 6 San Carlos-la Guásima-Miramar**  
Lodging: San Carlos  
**Description:**  
- Sights: very diverse succulent scrub in coastal thornscrub, Guaymas waterfront and seafood.

**Day 7 Miramar-Tucson**  
Lodging: Puerto Libertad  
**Description:**  
- Sights: Fouqueria macdougalii Sonoran desertsrub north of Hermosillo

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It's finally fall in Tucson, and that means peak butterfly season and peak blooming time for many of our beautiful butterfly plants, such as the passion vine. While it doesn't provide nectar for butterflies, the passion vine is the sole food source for the caterpillars of the showy Gulf fritillary butterfly.

Three passion vine species are native to Arizona: Passiflora arizonica, Passiflora mexicana, and Passiflora bryonioides. A fourth species, Passiflora arida, is a native of the Sonoran Desert in Mexico that has spread into Arizona (it's sometimes erroneously labeled in area nurseries as Passiflora foetida). The hands-down favorite with the fritillary caterpillars is the robust Passiflora caerulea, a South American native that is more readily available in local nurseries than the others. Growing several of these plants will provide plenty of foliage for the hungry caterpillars and increase your chances of actually getting to see the plant in bloom.

And what an incredible blossom it is—with a history to match. The legend of the passion flower began around 1550 when Cieza de León, a Spanish conquistador, returned home from Peru with the granadilla plant, now thought to be Passiflora ligularis. A Spanish physician, Nicolás Monardes, published an account of the plant in one of his herbals and suggested that the plant's flower structure could be viewed as a representation of the crucifixion of Christ. The flower became a useful visual tool for instructing converts in the New World, and as time passed, the details of the flower's correlation to the Passion became ever more elaborate: the flower’s ten petals and sepals represent the ten apostles who were present at the crucifixion; the stalk rising from the center of the flower (the androgynophore) is the column where Christ was tied and lashed; the filaments that encircle the stalk represent the crown of thorns; the five anthers signify the five wounds to Christ's torso, hands, and feet; and the three stigmas represent nails. (This is an abbreviated version. There's MUCH more.) In 1737, Linnaeus named the genus Passiflora, or Passion flower, thus enshrining the religious association in the plant’s name.

Beginning in the late 1700s, colored illustrations of exotic passion flowers were published in the many botanical and gardening periodicals of the day. Catering to the public's enthusiasm for the unusual plants, gardeners and nurserymen began the propagating and hybridizing the flowers for European gardens. Today there are some 600 species of passion flowers and more than 700 hybrids and cultivars.

Shown here alongside the structural diagram of a typical passion flower is a watercolor of Passiflora arida by Tucson artist Martha Thompson that was included in the Florilegium Program’s 2013 exhibit, Botanical Art of the Sonoran Desert: Past & Present. Martha was born and raised in the Port of Guaymas, Sonora, Mexico. After graduating from high school, she was granted a scholarship to the United States that brought her to Tucson to learn English as a second language. In 1995, she married and returned to Tucson where, in 2001, she took her first art class through the Pima County Parks and Recreation program. As a developing fine artist, Martha was influenced by her friend and mentor Larry Wollam, who helped her develop the knowledge and love of graphite and watercolor techniques. Nature has become her most enjoyable and inspirational subject.

She has multiple paintings in the permanent traveling and teaching art collection of the Arizona-Sonora Desert Museum. “I am passionate about painting things I love, specifically to serve as an educational tool. I am honored to be part of this collection about threatened and endangered flora, fauna, and habitats of the Sonoran Desert because it represents my home on both sides of the border.”
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Pack Rat Color Cartoon

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Check out the details of the Sonora Coastal trip. This will be of interest to many of you.

Remember, elections of Officers and Board Members, Holiday Party and Membership Renewal will be coming up in November and December.

Thank you as always for your tremendous support of TCSS

Dick Wiedhoff, President

I found this barrel by accident on a detour around a traffic snarl on Grant Rd. 30 heads and still growing. Homeowner says it came up volunteer in his yard and is 28 yrs old. Seems like fast growth for F. wislizinii. Does anyone know if seeds from this barrel will grow into multi headed plants?

Bill Thornton: cactusworld@msn.com

What’s happening?

Linda Heisley shared Pima Prickly Park’s newest additions: “The plants were rescued from Tucson International Airport as ground was cleared for a solar parking project. We ended up with 10 sotols, one Ocotillo & some grasses. Dick Ellis drove a 26 ft. truck to the park. The size of the plants make an immediate WOW presence.” Now that the weather is becoming more hospitable for a walk in the park….come and see first hand the new plantings …and enjoy Saguarohenge!!!!! —Cari Wright


Pima Prickly Park

Did you know?

Saguarohenge is the second topic for our “Then and Now” series as we explore the development of Pima Prickly Park.

The focus for the park has been...and continues to be...to create a space for the largest and most complete collection in the United States of Opuntioids and relevant succulents. With this objective in hand, the scoping document/proposal for the design of Pima Prickly Park was written and designed by Jessie Byrd. In the proposal she stated “A sacred place in the Opuntioid garden, the Saguarohenge garden will celebrate the ancient relationships between people and the Sonoran Desert. A pathway experience to the center of Saguarohenge will provide visitors with a new perspective on the Opuntioid garden and a heightened awareness of their own place in the desert.”

Joe Frannea shared with me that the original set of “Saguarohenge” saguaros was planted in the later designated park space by Robie Pardee. Robie reportedly had a great affinity for Tucson’s Native Americans and their respect and connection to the environment. Joe stated that the music through the (saguaro) needles sang to them.” Lovely…And, as is said, “a picture is worth a thousand words” (and now we can include video). Enjoy the following links for a visual encounter with Saguarohenge. (Even better…visit Saguarohenge near sunset!!!!) —Cari Wright


Nomination for Board of Directors Members and Officers

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Chicagoracing38@comcast.net
**November Program Presentation**

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**Cactus Rescued - Since 1999**

370 Rescues - 27,212 Volunteer Hours

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

TCSS Club Members receive a 10% discount

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

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Board meeting at the U of A College of Pharmacy

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Many of the adaptations in desert animals evolved in response to new extreme condition of light, heat, and aridity in dry topical forests that first appeared in the middle Eocene (40 mya), long before the deserts of North America existed. The uplift of the Sierra Madre Occidental in the late Oligocene-early Miocene (25-15 mya) caused many important changes. Tropical forests were no longer present coast-to-coast. Biotic communities were segregated out in elevational zones alone elevational gradients of rainfall and temperature for the first time. New vegetation types dominated by oaks and pines appeared on mountain tops. Immigration of new groups from Eurasia had dramatic impacts on the biota, including the replacement of primitive boas by colubrid, viperid, and elapid snakes, which radiated throughout North America. New species evolved on mountaintops, with more primitive ones persisting in tropical lowlands. Evolutionary radiations in plants established the Asteraceae, Fabaceae, and Poaceae as floristic dominants. In the middle Miocene, a drying trend changed tropical deciduous forests isolated northwest of the Sierra Madre Occidental first to thermoscrub, then to desertscrub as the Sonoran Desert formed (8 mya). At the same time, the land that is now Baja California split from mainland Mexico and began moving to the northwest in splendid evolutionary isolation. The uplift of the Sierra Nevada a million years ago formed the Mohave Desert, the youngest North American desert.

In the Pleistocene, changes in global climates restricted the Sonoran Desert to the lowest areas along the Colorado River and in central Sonora and southern Baja California for 80-90% of the last two million years. With cooler summers and shifts to winter rainfall, woodlands dominated by pinyons, junipers, and shrub oak expanded widely into the desert. During each of 15-20 interglacial periods, desertscrub expanded and woodland retreated. Well-preserved plant and animal fossils in indurated packrat middens documented changes in vegetation and climate for the last 40,000 years. The Wisconsin-Holocene transition was at 11,000 years ago. The early Holocene (11-8.5 ka) was a transition period with junipers and oaks still at low elevations when saguaro and brittlebush returned. Sonoran desertscrub developed in the middle Holocene (8.5-4.0 ka), but was different than today with catclaw acacia and blue paloverde on rocky slopes. Modern desertscrub formed about 4000 years ago with the arrival of foothills paloverde, desert ironwood, and organ pipe cactus in Organ Pipe Cactus National Monument. Vegetation composition was never stable as climate fluctuated continuously. Hohokam cultures thrived during a wet period about a thousand years ago. The last 500 years were the hottest and driest period in the entire record.