

Tucson Cactus and Succulent Society

Thursday January 7, 2016 from 7 - 9 pm

"Lithops: The Wild and the Tame"

Presented by Doug Dawson



Lithops julii fulleri



Lithops olivacea

Doug has completed fourteen 3-week botanical expeditions in Namibia and South Africa over the last 13 years, spending many nights sleeping on the ground and days hiking many mountains and rolling hills in search of mesemb species and other botanical riches. His latest interests include Namaqualand's many exotic crassulas and euphorbias.

As well as 37 known species of lithops, there are many subspecies, varieties and a non ending supply of cultivars. This yields a kaleidoscope of color, texture, and form. In his PowerPoint program, Doug will give us a glimpse of some of these "pretty faces" and also show many species as they blend with nature out in the veld of South Africa and Namibia.

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, Socotra, and Africa as well as our own state of Arizona. In recent years, he has 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 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.

This will be our first program presentation at the Sky Islands High School and an excellent way to wish everyone a "Happy New Year". Please come and enjoy a spectacular evening with our special guest, Doug Dawson. There will be lots of friendly faces, great conversation, delicious foods, raffle plants to win, and excellent free plants!



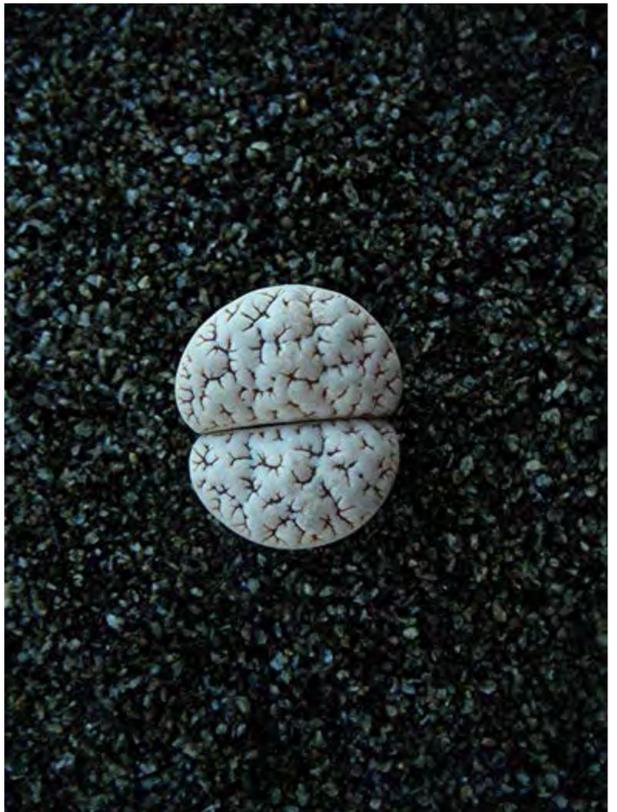
Lithops karasmontana bella



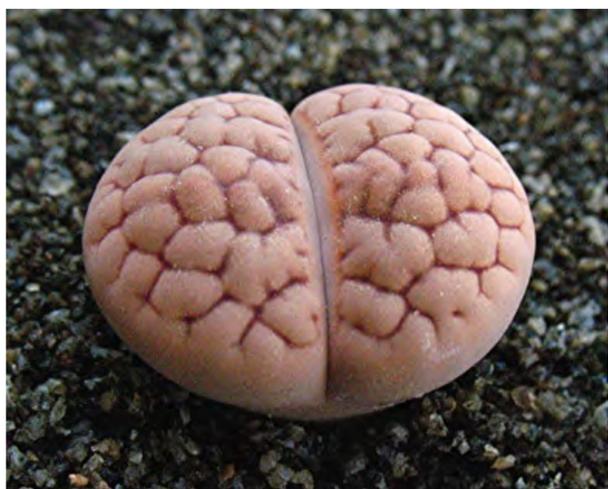
Lithops otzeniana



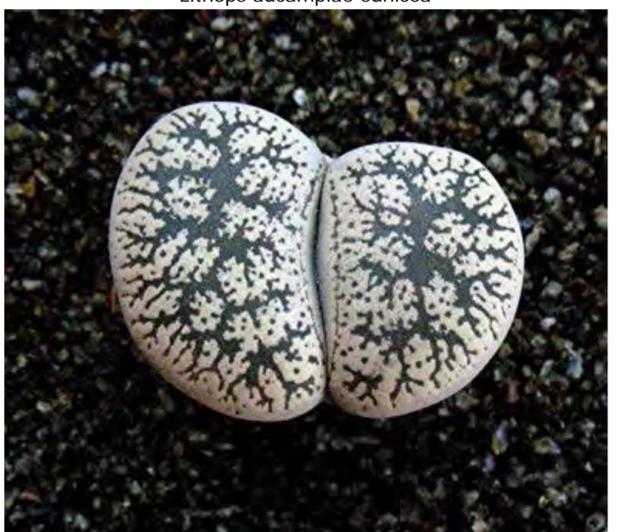
Lithops lesliei 'Albinica'



Lithops aucampiae eunicea



Lithops gracilidelineata waldroniae



Lithops hookeri lutea



Lithops lesliei venterii



Lithops verruculosa 'Rose of Texas'

Tucson Cactus and Succulent Society

Thursday February 4, 2016 from 7 - 9 pm

"Cactus Rescue: Using salvaged plants to create meaningful landscapes"

Presented by Jessie Byrd



Starting in 1999, the Tucson Cactus and Succulent Society Cactus Rescue Crew has accomplished 363 rescues with over 26,000 volunteer hours to save 76,500 plants from being bulldozed, preserving a vast amount of cacti and other native plants that would otherwise have been destroyed during the development of Arizona real estate. Many TCSS members are part of the cactus rescue crew or have purchased rescued plants for their own yards. As our own spaces quickly filled with these special plants, TCSS members began to look for other places in Tucson where these plants could be appreciated, including parks, schools, libraries, and other public spaces.

Part of Pima County's award-winning Sonoran Desert Conservation Plan from 1999 included the creation of a Native Plant Nursery to help balance urban development. The goal of the Native Plant Nursery is to increase species diversity in Pima County public areas by growing plants from locally-collected wild seeds and then to make those plants accessible to the people and wildlife who can both benefit from living among our native resources. Today, the Native Plant Nursery is a 2-acre facility located at Pima Prickly Park with over 20,000 native plants representing 230 Sonoran Desert species, all destined for public projects. Nursery inventory also includes plants salvaged from areas being developed, which helps to preserve local genetics and keeps mature plants out of the landfill. Learn how the Native Plant Nursery is working with the Tucson Cactus and Succulent Society to lead the effort to reintroduce native species into the urban fabric of Tucson, Arizona, putting the desert back where it belongs.

Jessie Byrd is a Tucson native and grew up running around the desert. She is the Native Plant Nursery Manager for Pima County Natural Resources, Parks and Recreation, which specializes in growing native plants for public projects. She has salvaged thousands of cacti, both professionally and as a TCSS Cactus Rescue Crew volunteer. She has designed and constructed landscapes where these can be enjoyed by the public, including Pima Prickly Park. Jessie believes that using native plants in urban landscapes can help encourage biodiversity while also creating beautiful gardens. She earned a Master of Landscape Architecture from the University of Arizona and a BA in Biology from Bryn Mawr College.

Be sure to come and enjoy this special program presentation by Jessie. She will also be bringing *Cylindropuntia molesta* plants to be given away at the conclusion of the meeting. There will be great conversations, excellent food to enjoy and much more!



Tucson Cactus and Succulent Society

Thursday March 3, 2016 from 7 - 9 pm

"What are cephalia? Are they adaptive?"

(The first part of this title is intentionally borrowed from the title of Franz Buxbaum's famous 1964 paper)

Presented by Root Gorelick



William Jackson Hooker, Alwin Berger, Britton & Rose, and Curt Backeberg used the terms cephalium and pseudocephalium, but only in 1964 did Franz Buxbaum try to provide reasonable definitions. Based on my sectioning of cacti, his definitions are not very useful. I provide a more modern description of the terms cephalium and pseudocephalium and then ask whether these specialized flowering structures are adaptive. I define cephalia by an underlying layer of cork and contiguous areoles arising from the growing point. These two traits preclude photosynthesis at the cephalium. Cephalia therefore seem to be maladaptive or at least non-adaptive. By contrast, pseudocephalia lack the cork layer and contiguous areoles, hence they undergo some photosynthesis from the pseudocephalium, hence their pseudocephalia are probably neither adaptive nor maladaptive. Others have proposed that cephalia and pseudocephalia are maladaptive insofar as they cause the stem apex to tilt precariously and thereby preclude further branching, but I show this is probably not the case. I promise to mostly show pretty pictures, with hardly any words on slides, except for genus and species names.

I am a professor of biology, specializing in evolutionary theory, who is cross-appointed in mathematics & statistics and in interdisciplinary studies, and who has also been an instructor in indigenous studies. The core of my research is in understanding the evolutionary origins of sex (from a feminist perspective) and understanding what generates diversity (surprisingly, not sex). As a theorist, however, I feel compelled to learn in-depth about real organisms, which for me has meant cacti, which I first saw lots of during graduate school at New Mexico State University and Arizona State University. I served two non-consecutive terms as editor of *Haseltonia*.

Please come and enjoy an excellent program where you will understand why this topic has been of curious interest over the years. Enjoy some great refreshments, win a great plant and also get a free plant!



Tucson Cactus and Succulent Society

Thursday April 7, 2016 from 7 - 9 pm

"Plant Hormones, Grafting and Growth of Desert Plants"

Presented by Ernesto Sandoval
Collections Manager, UC Davis Botanical Conservatory



Astrophytum asterias graft



Ernesto Sandoval has been wondering and seeking questions to why plants grow and look the way that they do for a long time. Now he explains and interprets the world of plants to a variety of ages and experiences from K-12 to professionals and Master Gardeners. He regularly lectures to a variety of western Garden Clubs throughout the year and particularly to Succulent Clubs throughout California and elsewhere since that group of plants is his particular passion and within his general interest and devotion to plants. He describes himself as a "Jose of all plants, master of none." Ernesto thoroughly enjoys helping everyone, and gardeners in particular, to understand why and how plants do what they do.

When he was about 13 he asked his dad why one tree was pruned a particular way and another tree another way. His dad answered bluntly "because that's the way you do it." Since then he's been finding the answers to those and many other questions by getting a degree at UC Davis in Botany and working from student weeder/waterer to Director over the last 25 years at the UC Davis Botanical Conservatory. He's long left the "mow blow and go" monoculture landscape gardening world of Los Angeles and has immersed himself in the world of polyculture and biodiversity by growing several thousand types of plants at the UC Davis Botanical Conservatory, many of them succulents. Several of his favorite garden projects involved converting lawns and or water loving landscapes to drought tolerant and diversity filled gardens! He likes to promote plant liberation by encouraging gardeners of all sorts to grow more plants in the ground when possible. He loves the technical language of Botany but prefers to relate information in more understandable methods of communication! By helping people to understand the workings of plants he hopes to help us better understand how to and why our plants do what they do and how we can maximize their growth, or at least appreciate what they do, with less effort and a better understanding.

Everyone who is interested in improving their cacti and other succulents education will want to be in the audience during this program by Ernesto. Come and join everyone for an excellent evening with, food, raffle plants and free plants.



Tucson Cactus and Succulent Society

Thursday May 5, 2016 from 7 - 9 pm

"Untangling the complex evolutionary history of the promiscuous prickly pears and other cacti, where did they all come from?"

Presented by Lucas C. Majure
Biologist of New World Succulents, Desert Botanical Garden, Phoenix, AZ 85008



Opuntia lutea, Costa Rica, Palo Verde



Melocactus matanzanus

Lucas grew up in central Mississippi where he developed a love for all things natural and a deep connection with the flora of the southeastern United States. It was there that his fascination with cacti began during his master's work at Mississippi State University. He then migrated to the University of Florida where he earned a Ph.D. working on the evolutionary history of the prickly pear cacti. He is now a research botanist at the Desert Botanical Garden in Phoenix, where he has continued to focus on prickly pear cacti throughout the Americas, but with keen focuses on continental North America and the Caribbean region. He currently has ongoing projects on the cactus floras of Cuba and Hispaniola in the Greater Antilles, as well as numerous projects in the southwestern United States.

For anyone interested in seeing Lucas and learning about his research and current projects, please plan to attend his presentation. You will also enjoy being with lots of friends, enjoy some great refreshments, win some great plants as well as obtaining a free plant during your departure.



Opuntia basilaris, Utah

Tucson Cactus and Succulent Society

Thursday June 2, 2016 from 7 - 9 pm

"Mexico, The Hidden Treasures of Coahuila"

Presented by Wendell S. (Woody) Minnich



Echinocereus pectinatus



Woody's Band Renion

Mexico is thought by many to be the richest region in the world for cacti. For all those individuals who travel in search of rare and unusual cacti, their first choice is often Mexico. The Sierra Madre Oriental is considered the center of diversity for Mexican genera, ranging from *Ariocarpus* to *Aztekium*s, *Echinocereus*, *Feroactus*, *Geohintonia*, *Gymnocactus*, *Mammillaria*, *Obregonia*, *Pelecephora*, *Thelocactus*, *Turbinicarpus* and many, many more. Because of the plethora of plants found in the states of Tamaulipas, Nuevo Leon, San Luis Potosi and Hidalgo, most field workers have just decided to ignore the little explored Coahuila.

For most of us, Coahuila and its neighboring state of Chihuahua were often only used as drive-throughs on our way to the succulent rich south. In recent years, many of the serious plant explorers have started finding new back country roads in these two states. These new roads have graciously opened up some of the rarely explored areas to extremely remote regions, and some of these back country roads (trails) are not even found on the maps! Coahuila, as close as it is to the USA, actually has some of the least explored and most remote regions in all of Mexico.

On our trip through Coahuila, we drove for many hours without ever seeing other vehicles or back country people. There were no urban or agricultural developments as these wild places are still virtually untouched! The valleys and mountains of these expanses will surely offer many new species for the field worker willing to do some serious exploring. Near the roads, if you wish to call them roads, I saw only a few dried-up old ghost towns where apparently some tough old Mexicans, probably from the Poncho Villa era, once resided.

From the unknown territories of Coahuila, there have been numerous new cacti and other succulents discovered and rediscovered. The crown jewel of these new plants is the fantastic *Mammillaria luethyi*. It was lost for over 60 years since its original siting, growing in a rusted tin can on a dusty rancho porch. All of us exploring Mexico had searched for this very special *Mammillaria*, until only a few years ago, Luethy found it in northern Coahuila. The Sierra del Carmen,

which abuts the Rio Grand and the Big Bend National Park, has also been the origin of other new species. Close to this area, we discovered a new, very beautiful *Echinomastus*, or possibly *Gymnocactus*? Also from this region we found a very handsome red *Sedum*, as well as *Echinocereus longisetus*, and the northern most of the *Echeverias*, *Echeveria strictaeflora*. In a remote dry lake bed, Laguna la Leche, we admired the amazingly cryptic *Escobaria abdita*. Wow, just some of the treasures of Coahuila!

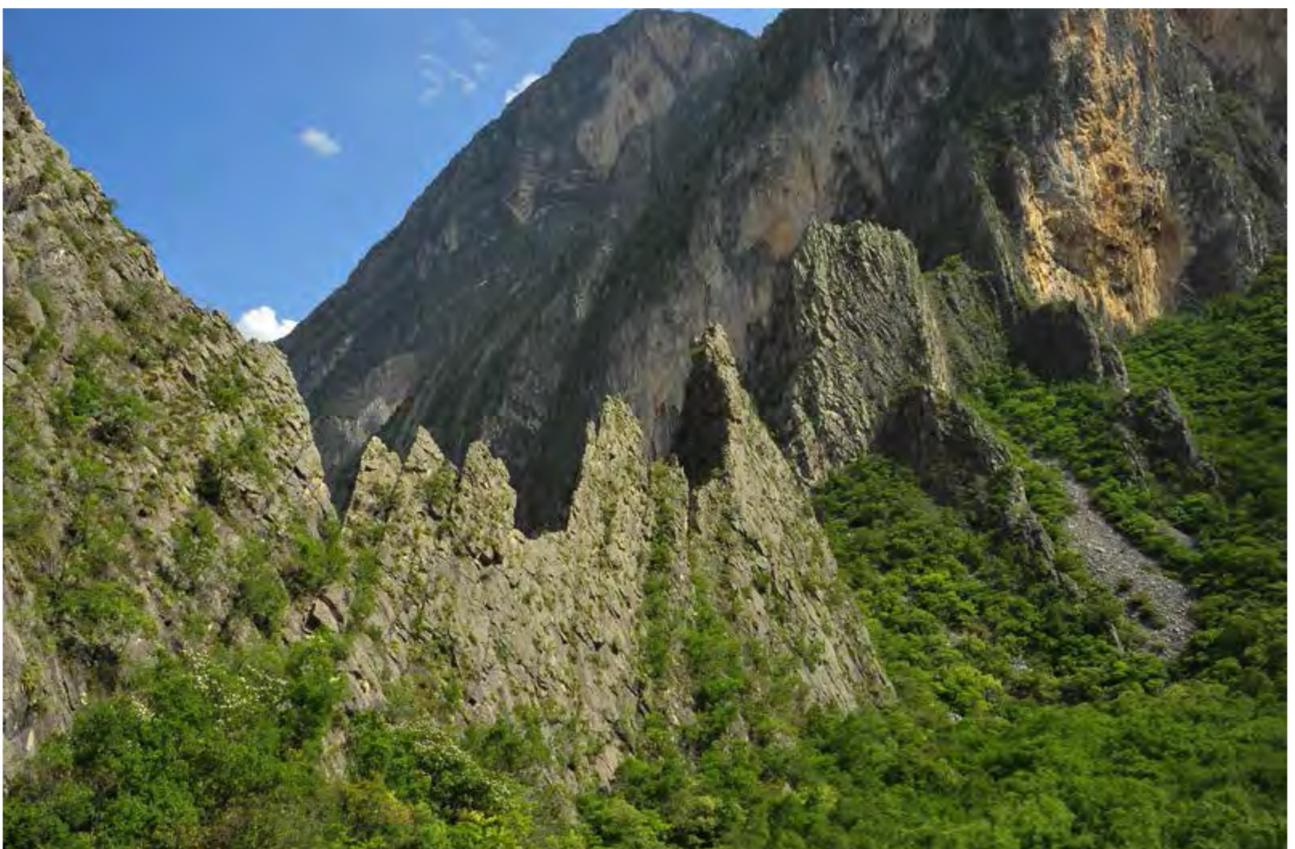
This trip was also to be an adventure in seeing some of the brand new *Agaves*, *Echeverias*, *Astrophytums*, *Echinocereus* and *Mammillarias*. We scored on almost everything we went to see, and never, in the 45 years that I have traveled Mexico, have I seen it so green. This talk will also feature many cacti and other succulents that have never been seen in books or presentations. Come explore Mexico with me!

Woody, as he is commonly called, has been in the cactus hobby for some 45 years and has become well known for his participation in many of the cactus and succulent clubs. He is an honorary life member of nine clubs as well as a life member and Friend of the CSSA (Cactus & Succulent Society of America.) He has served in almost all positions of leadership from president, to newsletter editor, to show chairman and so on. He is also known for his extensive field work studying primarily the cactus family. He has traveled throughout Africa, Argentina, Australia, Bolivia, Brazil, Chile, Madagascar, Mexico, Namibia, New Zealand, Peru, Socotra, the United States and Yemen. From these trips and his nursery experience, he has developed an extensive knowledge of the cactus family as well as many of the other succulent genera.

Woody is also known for his many presentations. His photography is considered to be special and his commentary very entertaining and educational. He is a recognized international speaker and has spoken for plant conventions - organizations all over the USA, as well as in England, Germany, Australia, New Zealand and Mexico. Woody has also authored a number of articles for various newsletters, the CSSA journal and his photographs are well published. Woody is the creator-originator of the first color version of the CSSA journal "Cacti and Succulents for the Amateur" that also featured show plants, shows and the growers of the pictured plants.

He is also known for his cactus and succulent nursery, Cactus Data Plants. CDP was started in 1975 and is still in operation today. Cactus Data Plants specializes in show specimens and rare cacti and other succulents with particular emphasis in *Ariocarpus*, *Astrophytum*, *Mammillaria*, *Gymnocalycium*, *Turbinicarpus*, *Melocactus*, *Copiapoa*, *Fouquieria*, *Pachypodium*, *Euphorbia*, *Cyphostemma*, *Adenium* and *Adenia*. Woody and his wife Kathy live in the beautiful mountains south of Santa Fe New Mexico, in a region called Cedar Grove. He has a small 1,200 sq. ft. greenhouse and a few cold frames where he grows his unique plants. He is always on the move and travels frequently to do presentations and shows throughout the western United States. Woody is the proud parent of three children, Leah, Denver and Sarah, all of whom are now grown and out in the big world. Woody is also the proud grandparent of three grandsons, Indiana, Ashton and Logan. He is a retired high school teacher of 32 years where he taught Graphic Arts, Architecture, Art and Health.

For a truly spectacular program presentation, please do not miss this one! Give Woody a great, welcome back to Tucson! Also be sure to enjoy being with lots of friends, enjoy great refreshments, win some beautiful plants and be sure to get a free plant during your departure.



Huasteca Canyon, site of *Agave albopilosa*

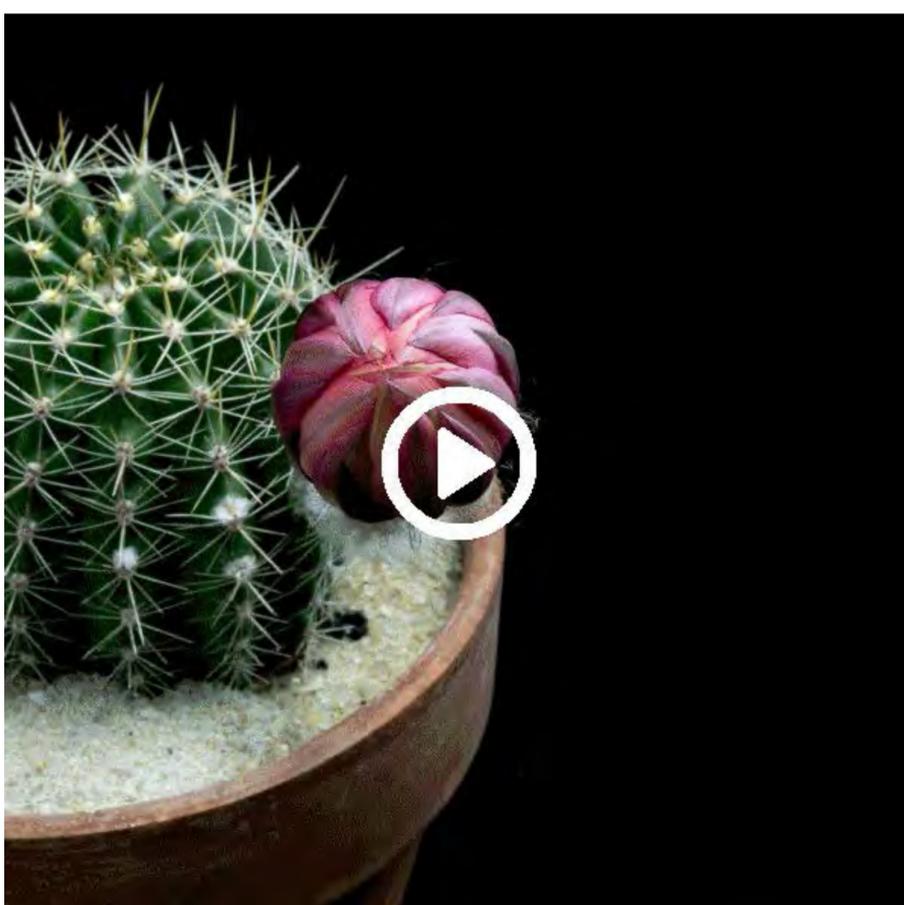
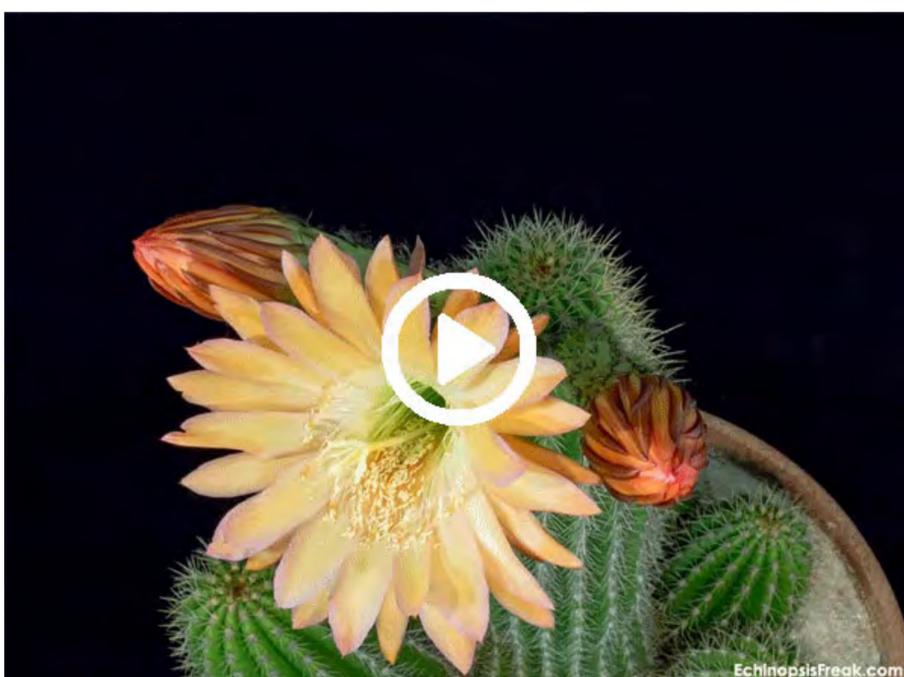
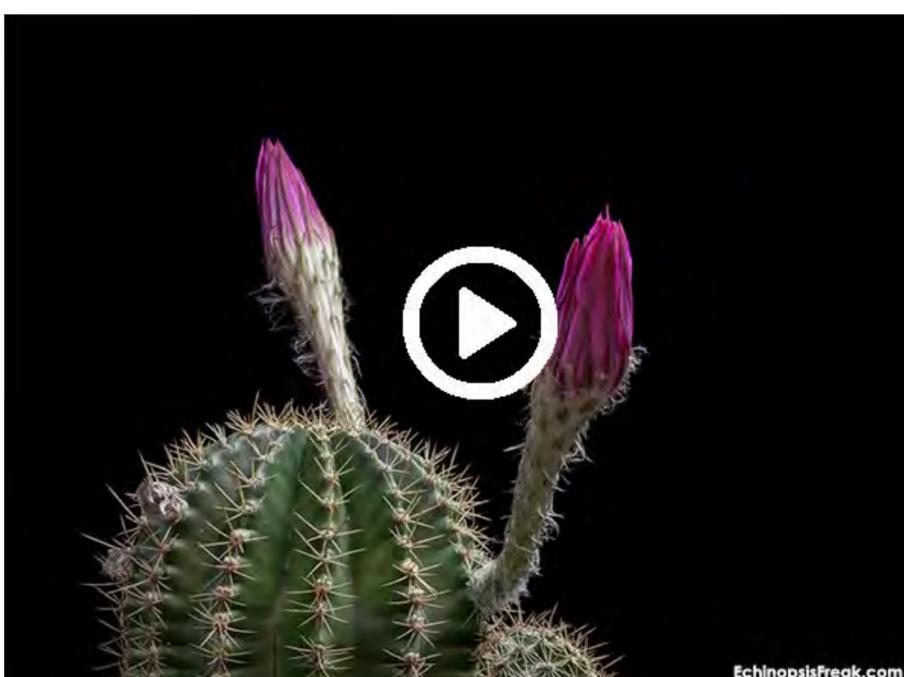
Tucson Cactus and Succulent Society

Thursday July 7, 2016 from 7 - 9 pm

"Freaky Flowers: Exploring the crazy beauty and fascinating history of Echinopsis flowers"

Presented by Echinopsis enthusiast Greg Krehel

(NOTE: To see this images animated in motion, go to <http://echinopsisfreak.com>)



Greg's presentation will feature:

- A selection of Greg's EchinopsisFreak timelapse videos of flowers blooming and wilting.
- Details on the timelapse creation process.
- A selection of Greg's focus-stacked still images of Echinopsis flowers.
- Details on the focus-stacking process.
- An overview of the interesting history of Echinopsis hybridization.
- Some tips and tricks for acquiring, growing, and getting great blooms from Echinopsis.

Greg Krehel: Upon retiring from software production a few years back, Greg reconnected with his childhood love of cacti and unwittingly stumbled onto the stunning flowers of the Echinopsis genus. The brief lifespan of these flowers led him to take up photography for the first time and resulted in his EchinopsisFreak.com website containing a host of time lapses and still images of these amazing flowers. Greg's work has been featured by National Geographic, the New York Times, Wired, the Singapore Botanic Gardens, and others.

The July program will feature some amazing video presentations featuring some very beautiful cacti that everyone needs to have in their garden! Be sure to be at this meeting! Other features from this excellent program will include your chance to win some really beautiful plants, enjoy great refreshments, talk with many other cactus and succulent fans and also receive a free plant provided by the TCSS.



Tucson Cactus and Succulent Society

Thursday August 4, 2016 from 7 - 9 pm

"Cacti of Texas"

Presented by Ad Konings



Echinocereus coccineus rosei-FranklinMnts

The cacti of Texas can be divided into three major geographical sections and the one with the most diversity occurs in the so-called Trans-Pecos area (West Texas). The other sections are the subtropical South Texas, and the wetter Central and East Texas. Inside the Trans-Pecos we find Marathon Basin in which several endemic species are found, but most Trans-Pecos cacti also occur in northern Mexico and some also in New Mexico. I will discuss in more detail the group of species affiliated with the Texas Rainbow (*Echinocereus dasyacanthus*), with the Green-flowered Hedgehog (*E. viridiflorus*), with the Claret-cup Cactus (*E. coccineus*), and with Sneed's Cory (*Escobaria sneedii*). The latter group is mostly restricted to higher elevations and it appears that some mountain ranges in the area have evolved their own (sub)species. Three of the cactus species that are endemic to the Marathon Basin are miniature plants that are difficult to spot in habitat outside of the blooming season, but when flowering appear to be much more common in their particular distribution area.

Unassuming and often armed with spines a small cactus often goes unnoticed in its natural habitat. This, however, radically changes after rains provide the juice of life; flowers, sometimes larger than the plant itself, materialize in a matter of days and seize the moment to propagate in their normally hot and dry environment. Rarely a cactus flower is open for longer than seven hours, usually during the hottest time of the day, after which it wilts before the night falls. Because most cacti in any given area are synchronized by the irregular rain showers, most bloom on exactly the same day—an arresting spectacle. For most visitors to the desert such a mass blooming is a once-in-a-lifetime event, not easily forgotten, which adds to the excitement of being in a desert.

Cacti have fascinated Ad Konings since he and his wife Gertrud moved to El Paso, Texas, in 1996. A few years later it became more than a fascination and both have traveled extensively throughout the state in order to locate and photograph each and every cactus species in its natural setting. With over 16 years of cactus hunting (shooting with a camera exclusively!) under his belt, he is one of the very few people who have seen and photographed each of the 132 Texas species in the wild. Ad is a biologist by profession (University of Amsterdam, Netherlands) and specializes in underwater observation and photography of cichlids (tropical freshwater fish) and has authored more than 20 books relating to these fishes. He is currently treasurer of the El Paso Cactus and Rock Club and also editor of their quarterly newsletter.

Please make August 4th an attendance mission for you and your family. This will be an excellent program that everyone should see. Be sure to make this a priority for August and also participate in getting an excellent raffle plant and also get a FREE plant per person when leaving.



Escobaria sneedii-FranklinMnts



Echinocereus davisii-Marathon



Echinocereus dasyacanthus-QuitmanMnts

Tucson Cactus and Succulent Society

Thursday September 1, 2016 from 7 - 9 pm

"NOVEL CACTI IN THE NORTHERN CHIHUAHUAN DESERT OF TEXAS"

Presented by Jim Weedin



Echinocereus coccineus



Opuntia azurea - Teresa Weedin

The Cactus Family in Trans-Pecos Texas is a dynamic flora of ca. 120 taxa, including 77 species in 21 genera. This mountain and basin region in the Chihuahuan Desert covers 32,000 square miles of desert, grassland and mountainous areas up to 8,749 feet in elevation. Geology and climate create variable edaphic factors enhancing distribution and speciation. The biosphere reserve anchored by Big Bend National Park and Big Bend Ranch State Park are now adjacent to large preserves in Mexico. Conservation and horticulture are receiving increased attention especially at the Chihuahuan Desert Visitor Center outside of Fort Davis, Texas.

Jim Weedin is a biogeographer specializing in the Cactus Family of the Rocky Mountains, especially far-west Texas. He has a B.A. in Geography from the University of Texas at Austin and an M.S. in Biology from Sul Ross State University in Alpine, Texas. He co-authored two books on Trans-Pecos Texas cacti as well as publications on chromosome numbers as an aide to taxonomy. He recently retired from 33 years of teaching at the Community College of Aurora, Colorado. He is a member of the CSSA and TACSS. Jim also scientifically collects fossil plants and is gathering historical information on his great uncle Tom Weedin (Florence, Arizona), who helped shepherd Arizona from Territory to Statehood.

Be sure to attend this special September program. There will be lots of great refreshments, conversation and excellent raffle plants. Also get your TCSS free plant offering as you depart for the evening.



Echinocereus davisii



Echinocereus chisoensis

Tucson Cactus and Succulent Society

Thursday October 6, 2016 from 7 - 9 pm

"History and Evolution of the Sonoran Desert"

Presented by Thomas R. Van Devender



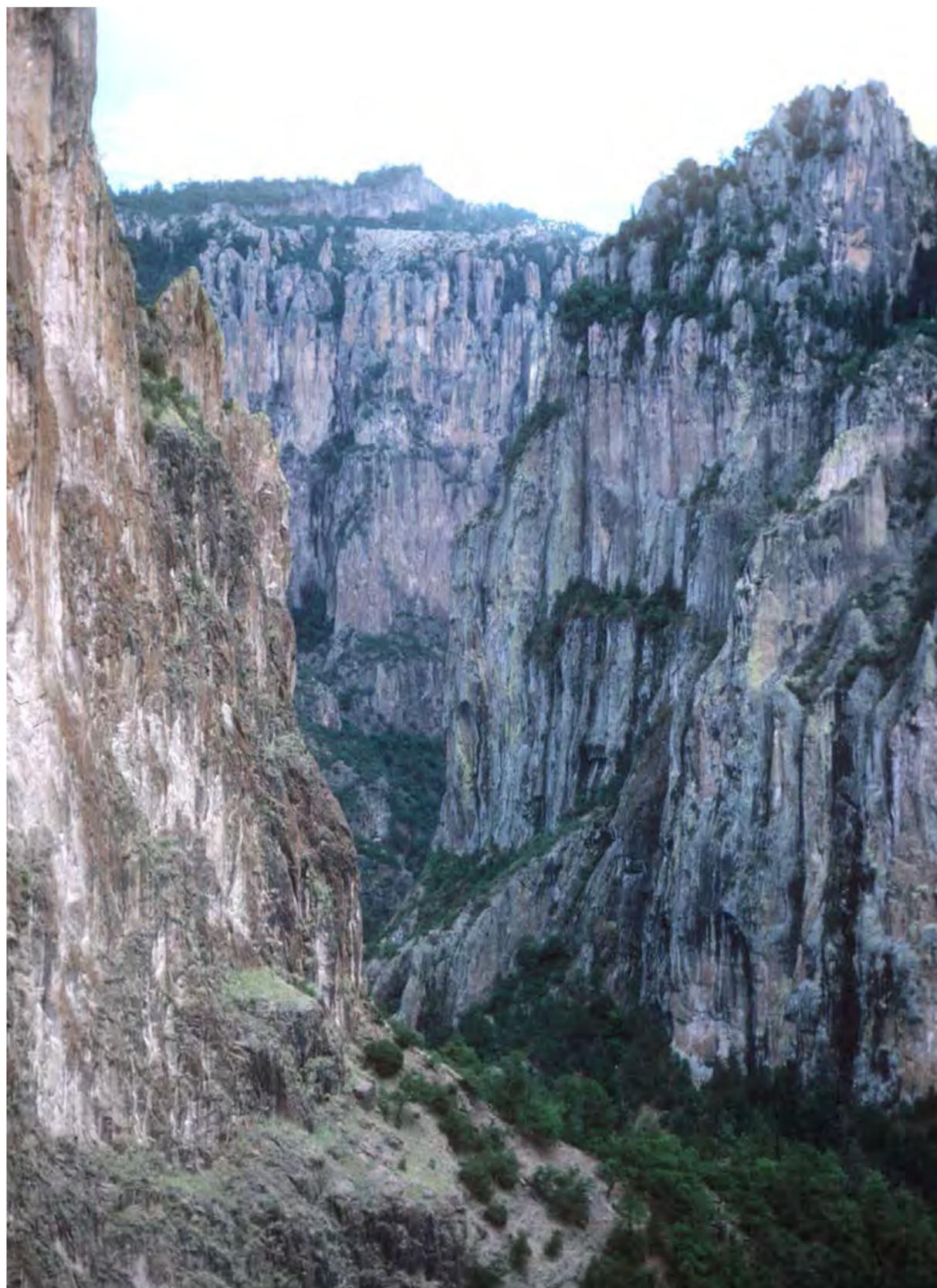
Many of the adaptations in desert animals evolved in response to new extreme condition of light, heat, and aridity in dry tropical forests that first appeared in the middle Eocene (40 mya), long before the deserts of North America existed. The uplift of the Sierra Madre Occidental in the late Oligocene-early 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 along 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 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% of the last two million years. With cooler summers and shifts to winter rainfall, woodlands dominated by pinyons, junipers, and shrub oaks 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.

Thomas R. Van Devender was the Senior Research Scientist at the [Arizona-Sonora Desert Museum](#) for 25 years, where he conducted research on a broad range of natural history topics. He has published well over a hundred publications on a range of topics, including natural history, paleoecology, desert grasslands, desert tortoise ecology, local floras, ethnobotany, herpetofaunas and the Madrean Archipelago. Tom is interested in the natural history of many areas in Sonora, especially the Madrean the Sky Island mountain ranges, the la Frontera zone within 100 km of the Arizona border, the Yécora area in the Sierra Madre Occidental, and tropical deciduous forest in the 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.

This will be a special program that everyone needs to see and 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.



Basaseachi Falls

Tucson Cactus and Succulent Society

Thursday November 3, 2016 from 7 - 9 pm

"Haworthia and Gasteria: Gems of South Africa"

Presented by Bob Webb and Toni Yokum



Haworthia bayeri



Haworthia pumila



Haworthia esterhuizii



Haworthia chocolate



Haworthia pumila



Gasteria carinataverrucosa



Haworthia cooperi trunc

Species within the related genera Haworthia and Gasteria are highly prized among succulent plant collectors around the world. Native mostly to South Africa, with small populations in Namibia and Mozambique, these gems of southern Africa range from easy to grow to very difficult in cultivation. More than 70 species of Haworthia are recognized by Bruce Bayer, but only 23 species of Gasteria are known after a recent revision by Ernst van Jaarsveld; both are prominent South African botanists with decades of experience growing and describing succulent plant species. Hybrids in both genera, as well as variegates, are highly sought after by plant collectors, particularly in Japan. We will present a program that shows what these plants look like in both wild populations and in cultivation, discuss the at-times murky world of plant taxonomy involving these genera, and discuss how to grow them in Tucson.

Bob Webb and Toni Yocum are owners of Arid Lands Greenhouses, and have grown succulent plants for more than 30 years, many of which were obtained from Arid Lands Greenhouses. They have traveled extensively in Africa and Arabia, looking for and photographing succulent plants. They have been to Oman, Yemen, Socotra, Kenya, Tanzania, Uganda, Namibia, Botswana, and South Africa to date. They live in the Sonoran Desert, and Bob travels regularly in Baja California.

This will be our final program presentation this year. Please come and enjoy talking with friends, enjoy a great presentation, have some refreshments and take home a free plant provided by TCSS on departure.



Gasteria bicolor bicolor ha



Gasteria royal



Gasteria blue ox glomerata



Gasteria batesiana barbarto



Gasteria armstrong



Haworthia truncata