

CENTRAL SPINE

NEWSLETTER OF CENTRAL ARIZONA CACTUS & SUCCULENT SOCIETY

OCTOBER 1998

September Meeting Notes

At the meeting in September Cathy Babcock gave a report on her recent trip to South Africa, Madagascar, and Zimbabwe to attend the IOS Congress Conference. She plans on putting on a pictorial presentation at one of the upcoming meetings.

A former member, Marilyn Fitz-Randolf, has contacted Scott regarding some offsets of agave that she wishes to part with. Her late husband, Jackson, was quite an agave specialist, and she has some very interesting plants at her house. She is doing well and would like to talk to any friends remaining in our society. Contact Scott for her number.

This is the time of the year that we must begin to select our slate of officers for the new year. Leo Martin and Richard Maxwell will head up the nominating committee and are seeking others to help them. If you wish to serve on this committee, or if you wish to run for one of the offices or board positions, please let Leo, Richard, or Scott know of your desire.

Our annual plant show will be in February this coming year. As always, we need lots of volunteers to help the show run smoothly. The more workers we have, the less time each will have to spend working, and the more time we will have to enjoy the show.

As the weather finally breaks, Scott is also soliciting for members who might be willing to host an open garden at their home. It is a good way to share one's talents and interests with others in the society. One of our mem-

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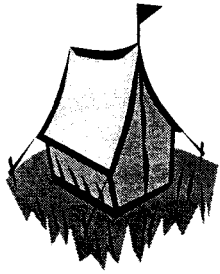
How do you enlarge your collection?

*This article first appeared in the newsletter of the Henry Shaw Cactus Society, St Louis, MO
by Leo A. Martin*

One thing we all have in common is NOT ENOUGH PLANTS. (We know it's true, though often our spouses, greenhouses, windowsills, basements, patios, pocketbooks, common sense, etc. say otherwise.) Some people have a list of what they will allow themselves to buy next, whereas some are impulse buyers. Some people are in a hurry and want the biggest specimens possible of everything they buy. Some people enjoy starting from seed or small seedlings, feeling like cheaters if they buy a plant more than a quarter as old as they are. (I'm in that category.) Some people want to collect all members of a given genus (don't try this with *Mammillaria*.) Some people can't afford to spend much on their hobby. (Joining a C&S society is great if you're on a limited budget because so many of your new friends will be happy to share cuttings, offsets, and extra plants with you. It's well worth the membership fee.) Some people collect only things with big flowers, or white flowers, or fragrant flowers, or certain colored spines, or crested or monstrose, or with caudices, or things their friends can't grow, or things from certain deserts, or certain islands.... You can see there are endless possible ways to categorize plants.

I'd like to suggest you start small. By this I mean buy plants you're not too familiar with or haven't grown before in the smallest size you can find. This has several advantages: 1) They take up less space in aggregate; 2) They cost less to buy-MUCH less; 3) You can afford many more plants this way; 4) Your

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Good Groing

I'm getting ready to go on safari—plant safari.

It seems so simple, yet it's so true, you gotta get outside and into the backcountry to see plants in habitat. For me, it's not good enough to see city cactus. Sometimes, going to the Desert Botanical Garden is like going to a zoo. The inhabitants are captive wild things.

Several times each year, I have the urge to do something wild. So, I go to visit cactus and other desert plants where they live. Last November, my destination was Big Bend National Park to revisit that old friend. My best botanical find was the endemic *Hechtia scariosa*, a relative of the pineapple! I was slightly off the beaten path, but still within sight of the main road near Boquillas Canyon. The find was a thrill like only another plant lover would know. Even the Ranger was stuck for an identification. Finally, she pulled out an out-of-print book and we enjoyed discovering the ID together.

This November, I'm heading to the backcountry of Death Valley National Park. There are *Echinocactus polycephalus* v. (** and *Opuntia basilaris* in the severe landscape where I prefer to camp. On the way in and out of the desolate Saline Valley, I pass forests of Joshua Trees. They are reminders of the cold temperatures experienced in the Mojavean winters.

For nearby wildness, there are lots and lots of plant safari sites within easy driving to the Valley. Along the Young Highway, east of Roosevelt Lake, I found an area of naturally crested and monstrose *Echinocereus*. There are at least a half dozen mutant cactus within a stone's throw of each other. They are perched adjacent to some breathtaking cliffs with a great scenic view of the Lake and east slope of Four Peaks. How'd I find this great place? I put on my hiking boots, got out of the house, drove a new road, and got out of the truck to explore.

A safari is an excursion into a remote place to discover wild things. Plant safaris are a great way to be thrilled by nature, get some fresh air, and see the wild habitats of our cultivars.

Packing to go,
Debra Korobkin



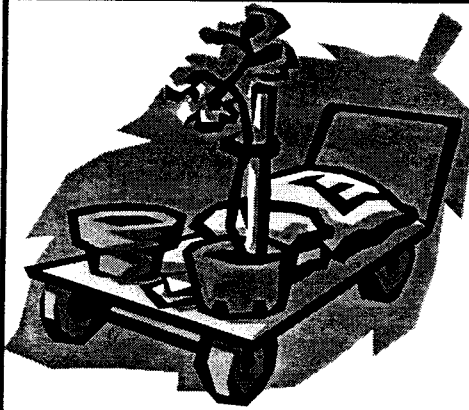
SILENT AUCTION

Sunday October 18th 1998

2:00 - 4:00 PM

Here are some do's and don'ts for the silent auction: Please label all plants, even if only at the generic level. Use a 3x5 card or similar piece of paper for each plant to include the name of the plant at the top and an opening bid, such as 50c. You may wish to add a comment like flower color, rare, once owned by Linnaeus, etc. You may bring in cuttings as well, but please don't bring in mass quantities of cuttings or offsets, especially common ones that are not likely to be picked up, because the Garden will have to dispose of them. All tables will be on a central timer this time. We may have a special table with a longer time, depending on what is brought in. You may bid on an item in increments of at least 50c as many times as you like. Once the bell has rung, the bidding is over, and the last name on the card is the winner. If an item has no name on it, you may purchase it for the opening bid amount. Since you may be bidding on many items, you should move around often to check your bids. Bring a few boxes to take home your plants.

Are you creative? Familiar with the internet and designing web pages? We need you. CACSS would like to have a web site but we need a member to design and maintain it. Could this be you, if so please can a board member and let them know of your interest.



live-in over collection critic is less likely to notice a new plant in a 1" pot than a blooming size saguaro; 5) You can learn on a cheap plant rather than a one-of-a-kind super-expensive monster; 6) The plant will more readily adapt to your situation when small than when in a 36" box; 7) You will get to

identify many small things bought without nametags, and in the doing so you'll learn more about plants; 8) Often rarities are sold small and unlabeled, and you can find some nowhere else; 9) Many cacti bloom small and young, so you get fast results; 10) You will learn more about the plant's natural growth habits; 11) If you don't like the plant after a while, it's easier to! give away something small and ugly than something large and ugly and 12) You can decide if you actually want it before you buy a big one.

I have bought several dozen of the smallest plants at the sale bench at the last two Henry Shaw Cactus Society July shows. They were 75 or 85 cents each. I moved them into 2" or 4" clay pots soon after buying them. I now have lots of small cacti that bloom already. This spring, some of these tiny cacti blooming for the first time in their short lives include *Gymnocalycium baldianum* (with a flower bigger than the plant and more buds on the way), *G. erinaceum*, *G. stenogonum*; *Hamatocactus setispinus*, which blooms all summer with lightly fragrant yellow flowers; *Lobivia aurea v. leucomalla* (with a yellow flower four times as big as the tiny plant and two more buds coming), *L. aurea v. winteriana*; *Mammillaria bombycina*, *M. melanocentra*, *M. microhelia*, *M. nejpensis*, *M. plumosa*, *M. theresae*, *M. zielmanniana* (now on its second flush of bloom); *Notocactus apricus*, *N. buiningii*, *N. crassigibbus*, *N. haselbergii*, *N. rutilans*, *N. scopa*, *N. vanvietii*: two different Rebutias with dozens of orange flowers from tiny white balls in 2" clay pots; *Sulcorebutia violacea*, *Thelocactus hexaedrophorus*, and *Weingartia neocummingii* with a dozen yellow flowers all around the crown.

Most of these were not labeled. I could tell which genus many were, and other club members helped me with some. Most species names I had to find in books, which taught me a lot about lots of plants. Some I wasn't sure of until the buds opened! That is part of the fun, however.

Take another look at tiny plants next time you pass a sales bench.

bers, Doug Dawson, whose hobby is starting things from seeds, has offered seeds and information on seed germination to others in the society. He has a good supply of seeds as well as sources for obtaining them. Now is the best time to start the germination process, so call Doug if you share his interest.

Plan to attend the silent auction this month. Bring in some plants to be auctioned and/or some money to add to your collection of plants. Jim Sudal will once again have some of his beautiful pots available for sale.

The speaker for the September meeting was Jon Weeks, founder of Landscape Cacti desert nursery in Tucson. He gave a slide presentation of the various plants that are native in the area between Monterrey and Saltillo, Mexico. He has made many trips along this route, and had some fantastic slides of the area which made the audience feel as if they were actually present on his trip. The variety of cacti and agave in his presentation was fascinating, and the information regarding temperature and rainfall variations was both interesting and helpful to those who wish to have some of these plants in their own collections. Thank you Jon, and we wish we could go on one of your trips with you so you could show us all of the little hidden areas which you photographed.

Deanna Jones, Secretary



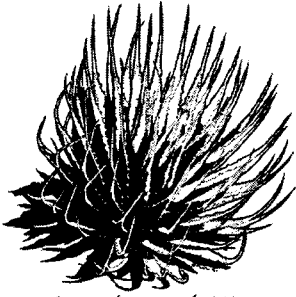
CACTUS & SUCCULENT SOCIETY OF AMERICA

Presents:

THE 28th BIENNIAL CONVENTION

Las Vegas, Nevada

April 11-16, 1999



Agave utahensis var. abscissa

CSSA CONVENTION 1999
LAS VEGAS NEVADA

Registration fees: CSSA members \$165,
non CSSA members \$225
CSSA membership \$35

(when you register inform them you are part of CACSS)

PROGRAM FEATURES
MANY FANTASTIC
EXOTIC and DOMESTIC
SPEAKERS

EXOTIC SPEAKERS INCLUDE:

SUSAN CARTER HOLMES (UK):

Succulents of Africa

GERHARD MARX (S. AFRICA):

Haworthias and Euphorbias

DEREK TRIBBLE (UK):

South African Succulents

EVA and VOYTEK FOLK (Vancouver, BC):

Cacti and Succulents in 3-D

SONIA BARKER-FRICKER (UK):

The Grand Canyon and Borderlands

TOURS

PRE-CONVENTION:

Death Valley - Mojave Desert

POST-CONVENTION:

South Rim of the Grand Canyon — Northern Arizona

FOUR MID-WEEK CONVENTION TOURS (\$35 each)

- Red Rock — Spring Mountain Ranch — Potosi Mountain
- Valley or Fire- Lake Mead (including visitors' center)
- Ash Meadows — Devil's I-Sole — Pahrump Vineyards — Potosi Mountain
- Castle Mountain Mine (Viceroy Gold Corp) — and surrounding area

Detailed program guide and registration forms appeared in the July-August 1998 issue of the Cactus and Succulent Journal and are on the CSSA web site:

www.cactusmall.com/cssa

For more information write to:

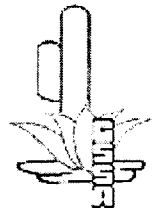
Duke Benadom

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Desert Animal Survival

<http://www.desertusa.com/survive.html>

Animal Adaptations

Lack of water creates a survival problem for all desert organisms, animals and plants alike. But animals have an additional problem -- they are more susceptible to extremes of temperature than are plants. Animals receive heat directly by radiation from the sun, and indirectly, by conduction from the substrate (rocks and soil) and convection from the air.

The biological processes of animal tissue can function only within a relatively narrow temperature range. When this range is exceeded, the animal dies. For four or five months of the year, the daily temperatures in the desert may actually exceed this range, called the range of thermoneutrality. Combined with the scarcity of life-sustaining water, survival for desert animals can become extremely tenuous.

Fortunately, most desert animals have evolved both behavioral and physiological mechanisms to solve the heat and water problems the desert environment creates. Among the thousands of desert animal species, there are almost as many remarkable behavioral and structural adaptations developed for avoiding excess heat.

Equally ingenious are the diverse mechanisms various animal species have developed to acquire, conserve, recycle, and actually manufacture water.

Avoiding Heat

Behavioral techniques for avoiding excess heat are numerous among desert animals. Certain species of birds, such as the Phainopepla, a slim, glossy, black bird with a slender crest, breed during the relatively cool spring, then leave the desert for cooler areas at higher elevations or along the Pacific coast. The Costa's Hummingbird, a purple-crowned and purple-throated desert species, begins breeding in late winter, then leaves in late spring when temperatures become extreme. Many birds are active primarily at

dawn and within a few hours of sunset, retiring to a cool, shady spot for the remainder of the day. Some birds, such as the kingbird, continue activity throughout the day, but always perch in the shade.

Many animals (especially mammals and reptiles) are crepuscular, that is, they are active only at dusk and again at dawn. For this reason, humans seldom encounter rattlesnakes and Gila Monsters. Many animals are completely nocturnal, restricting all their activities to the cooler temperatures of the night. Bats, many snakes, most rodents and some larger mammals like foxes and skunks, are nocturnal, sleeping in a cool den, cave or burrow by day.

Some smaller desert animals burrow below the surface of the soil or sand to escape the high temperatures at the desert surface. These include many mammals, reptiles, insects and all the desert amphibians. Rodents may plug the entrances to their burrows to keep out hot, desiccating air.

A few desert animals, such as the Round-tailed Ground Squirrel, a diurnal mammal, enter a state of estivation when the days become too hot and the vegetation too dry. They sleep away the hottest part of the summer. (They also hibernate in winter to avoid the cold season.)

Some desert animals such as Desert Toads, remain dormant deep in the ground until the summer rains fill ponds. They then emerge, breed, lay eggs and replenish their body reserves of food and water for another long period. Some arthropods, such as the fairy shrimps and brine shrimps, survive as eggs, hatching in saline ponds and playas during summer or winter rains, and completing their life cycles.

Certain desert lizards are active during the hottest seasons, but move extremely rapidly over hot surfaces, stopping in cooler "islands" of shade. Even their legs may be longer so they absorb less surface heat while running.

Dissipating Heat

Some animals dissipate heat absorbed from their surroundings by various

mechanisms. Owls, Poorwills and nighthawks gape open-mouthed while rapidly fluttering their throat region to evaporate water from their mouth cavities. (Only animals with a good supply of water from prey can afford this type of cooling, however.) Many desert mammals have evolved long appendages to dissipate body heat into their environment. The enormous ears of jackrabbits, with their many blood vessels, release heat when the animal is resting in a cool, shady location. Their relatives in cooler regions have much shorter ears.

New World vultures, such as the Turkey and Black Vultures, are dark in color and thus absorb considerable heat in the desert. But they excrete urine on their legs, cooling them by evaporation, and circulate the cooled blood back through the body. This behavior, called urohydrosis, is shared with their relatives the storks, successful birds of the African deserts. Both vultures and storks may escape the hot midday temperatures of the desert by soaring effortlessly, high on thermals of cooler air.

Many desert animals are paler than their relatives elsewhere in more moderate environments. Pale colors may be seen in feathers, fur, scales or skin. Pale colors not only ensure that the animal takes in less heat from the environment, but help to make it less conspicuous to predators in the bright, pallid surroundings.

Retaining Water

The mechanisms some desert animals have evolved to retain water are even more elaborate. They range from simple to physiologically complex. Some retain water by burrowing into moist soil during the dry daylight hours (all desert toads). Some predatory and scavenging animals can obtain their entire moisture needs from the food they eat (e.g., Turkey Vulture) but still may drink when water is available. Reptiles and birds excrete metabolic wastes in the form of uric acid, an insoluble white compound, wasting very little water in the process. Mammals, however, excrete urea, a soluble compound that accounts for considerable water loss. Most

mammals, therefore, need access to a good supply of fresh water, at least every few days, if not daily.

Acquiring Water

Desert creatures derive water directly from plants, particularly succulent ones, such as cactus. Many species of insects thrive in the deserts this way. Some insects tap plant fluids such as nectar or sap from stems, while others extract water from the plant parts they eat, such as leaves and fruit. The abundance of insect life permits insectivorous birds, bats and lizards to thrive in the desert.

Some desert creatures utilize all of these physical and behavioral mechanism to survive the extremes of heat and dryness. Certain desert mammals, such as Kangaroo Rats, live in underground dens which they seal off to block out midday heat and to recycle the moisture from their own breathing.

These ingenious rodents (there are a number of species) also have specialized kidneys with extra microscopic tubules to extract most of the water from their urine and return it to the blood stream. And much of the moisture that would be exhaled in breathing is recaptured in the nasal cavities by specialized organs.

If that weren't enough, Kangaroo Rats, and some other desert rodents, actually manufacture their water metabolically from the digestion of dry seeds. These highly specialized desert mammals will not drink water even when it is given to them in captivity!

These are just a few examples of the ingenious variety of adaptations animals use to survey in the desert, overcoming the extremes of heat and the paucity of water.

Next Month: Desert Plant Survival



CACSS LIBRARY BOOK REVIEWS

This month I've focused on books in our library for the intermediate collector and the following books are recommended for those people with some background in cacti and succulents:

1. *The Cacti of Arizona*, Benson, Lyman (1977, 218 pp., 3rd. ed., color and b&w photos and illustrations) SB This good field guide covers the distribution and habitat of native Arizona cacti, their structure & identification, with keys and tables of 11 genera.
2. *Cactus Lexicon*, Backeberg, Curt, England (1976, 828 pp., 543 illustrations - b&w and color) HB. Backeberg was known as a "splitter" of cacti genera, so with that in mind, this comprehensive dictionary of cacti species known at the time of his death in 1966, includes his principles of systematic classification, notes on cultivation, classification, alpha lists and distribution maps.
3. *The Cactus Primer*, Gibson, Arthur C. & Nobel, Park S. (1986, 286 pp., b&w photos and charts) HB. A very good botany textbook for cactiphiles. Even Dr. Pinkava used this text for his classes at ASU! Discusses why cacti are the way they are and have areoles, spines, tubercles and ribs. Topics include physiology, chemistry, Crassulacean Acid Metabolism (CAM), phylogeny, ecology, evolution and a glossary.
4. *Colorful Cacti of the American Deserts*, Lamb, Edgar and Brian (1974, 236 pp., 140 color photos and maps) HB Arizona, California and Texas cacti and national parks and monuments with cacti. Common and Latin names, soil conditions best for growth, practical advice on how to "duplicate" the native habitats indoors.
5. *The Flowering Plants of Africa*, ed. Killick, Ph.D., D.J.B (1978, color and b&w illustrations). SB. Descriptions and color plates of indigenous succulent flowering plants of Africa, published by the Botanical Research Institute, Republic of South Africa, to mark the occasion of Succulenta 78, the International Succulent Congress, held in Pretoria on July 17-22, 1978. Genera include: *Adromischus*, *Aloe*, *Brachystelma*, *Caralluma*, *Cotyledon*, *Crassula*, *Dinteranthus*, *Echinopsis*, *Hoodia*, *Euphorbia*, *Herreanthus*, *Pachypodium*, *Pelargonium*, *Portulacaria*, and *Sarcocaulon*.
6. *Growing the Mesembs*, Storms, Ed (1976, 24 pp., color and b&w photos) pamphlet. Sections on habitat, soil, potting, watering, light, temperature and humidity, diseases and pests, and seed germination, plus descriptions and photos of key genera.
7. *An Illustrated Guide to Cacti and Succulents*, Chapman, Peter & Martin, Margaret (1982, 160 pp. 150 line drawings and 120 color photos) HB A quick photo guide with temperature, light and soil tips Suitable for beginners as well.
8. *The Illustrated Reference on Cacti & Other Succulents*, Lamb, Edgar and Brian, Vols. 1-5, England (1955-1978, 1500 pp. total, B&W and color photos - 1300 total) HB. This is a great non-technical encyclopedia series. Each volume contains Part One: Cacti and Part Two: Succulents Other than Cacti. A photo of each plant is accompanied by the name, botanical variety, country of origin and notes on color, size and general cultivation. Vol. 2 focuses on the non-South African Euphorbias, some Agaves, and Canary succulents; Vol. 3 includes some dwarf species of Opuntias and Aloes, some genera from South America, a variety of Stapeliads, and some Canary Island succulents; Vol. 4 includes a large number from the Echinocactus Group, and caudiciform succulents from Madagascar; and Vol. 5 contains

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Growing Stapeliads in Phoenix

by Leo A. Martin

The plant in my collection for the longest is *Stapelia gigantea*, which I've had since 1969. I became enamored of milkweeds (family *Asclepiadaceae*) that year when I saw *S. gigantea* for the first time at the Mitchell Domes Desert House in McArthur Park in Milwaukee. There was an enormous planting, at least 30 by 30 feet, with zillions of open 15" blooms at once. It smelled like heaven to a Stapeliphrenic. I was hooked. We were about to move to southern California and my grandfather found one for me. It grew great guns and bloomed that fall. I remember him every time I see the plant. The next spring my great aunt came to visit and, when in Laguna Beach, offered to buy me a present of a small succulent dish garden. One of them had a plant that I was sure was related to *S. gigantea*, so I picked that one, of course. This one also grew and bloomed easily, and set seed almost every year. I still have it as well; it is probably a *S. asterias* hybrid. I raised the seed through several generations before I was 16, before I knew Stapeliads were hard to grow.

After moving to Arizona I added a few more here and there, before I knew much about them. Next came *Huernia primulina*, *Huernia confusa*, and then *Huernia keniensis*, which I bought for \$1 at a garage sale in Tucson. It was growing in pure sand in one of those brightly colored aluminum tumblers popular in the 60s. Then came *S. variegata*. Then came lots more. Guess what? My first six are just about the easiest plants in the world to grow. The rest aren't. But, I can't get through the season without my Stapeliad fix. The rest of the article will go over what I've learned about them in general.

Propagation

Seed: Seed is viable for ages and ages. Remove the milkweed parachute and plant in moist soil; keep warm (over 75 degrees F) and humid with a plastic cover. Give bright light but no direct sun or your plants will steam-cook if properly covered. They will sprout within a week; often the next day if it's warm enough. When they have a bit of stem beyond the cotyledons, remove the plastic cover but keep them moist but not wet. As they grow to about 1/2" high, begin treating them more and more like adults in terms of watering, but don't let them stay bone dry for long. They like fertilizer. As they grow, give plenty of light, but don't let them get red.

Vegetative: Must be done when days are warm. Nights can be cool--in fact, I think slips do better then because they don't dessicate as much before rooting. In Phoenix this means mid spring and fall. Summer works, too, but there is more trouble with rot during the high heat. If an adult plant starts rotting in the winter and you manage to salvage an undamaged growth, don't try to root it until the next spring; it will easily last that long if put on dry sand, and it will almost surely rot if you try to water the slip in the cool season.

Select propagation material that has at least one mature growth. Most of these separate easily at joints, so twist off your slip, don't cut it. If you select a slip that already has roots or root bumps on the bottom, your success is almost assured. Dip the entire slip in 70% rubbing alcohol to kill mealy bugs and let it dry. Repeat. I plant them right after this rather than let them dry a day or two; I think it's too dry here in the desert to let little bits of stuff dessicate too much.

Place the cutting on the surface of the soil and press in lightly to increase contact. Orient it as it grows. For sideways huernias, this means sideways; for upright Stapelias, this means upright, probably with a stake for a while.

I soak the soil next. Many books say never to water until they root. Here in Phoenix I think it's too dry for this treatment for all but the extremely desert-adapted plants such as *Stapelianthus*. If you're unable to decide, at least spritz them so the soil isn't bone-dry. *Huernia keniensis* will actu-

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ally root in water. I've done it just to see; this plant is almost impossible to kill.

If the plants don't start growing in a week, they have mealy bugs on the undersurface. If you can't see them, they're still there. Treat with Orthene. Just do it; they will never, never, never root so long as even one mealy is there.

Once they start growing, treat them like adults.

Adult care

Growth habit in general and potting: Most of these make new growths pointing outward from the center and eventually the older parts die. The older parts are definitely more rot-prone than vigorous new growth. Therefore, these are plants that need frequent repotting and pruning of old growth. Many people do so yearly; I'm not retired yet, so I do it every 2-3 years. But, I wish I had time to repot annually. *S. gigantea* can grow to 6 feet in diameter in one of our seasons.

Most also root shallowly and like plenty of root air, but appreciate water when growing. This means porous, rapidly-draining soil, and I think shallow potting with frequent watering during growing periods is best in our climate. English authors disagree completely, but they're in England. Perhaps the best solution for many horizontal growers such as many *Huernias* is a hanging basket.

Some of the real desert dwellers such as *Pseudolithos* and *Trichocaulon* are very rot-prone if the body is scratched during periods of high humidity. Many successful growers of these plants use epoxy-coated top dressing so there are no sharp edges. I don't top-dress my plants; I don't think the softer ones need it in our climate and the *Pseudolithos* and *Trichocaulon* come from a climate much like ours except they don't get nearly as much summer rain--many years none at all--so I just almost don't water them during the monsoon season.

I use half potting soil mixed with a quarter fine granitic sand from a wash and a quarter pumice for most of these. A beautiful *Trichocaulon* I bought from California Succulents in Watsonville, near Monterey, was growing in 3/4 pumice and 1/4 large limestone gravel. I put it into a mix substituting granite for the limestone and it seems happy.

Temperature

Basically none tolerate any frost. All take any amount of heat so long as they're shaded and dry. They grow best when days are warm and nights are cool; this generally means March-April and October-December here. Most bloom when the temperatures drop in September-October, though many *Carallumas* bloom in the heat.

Light

Almost all these plants grow under shrubs or trees. At the 1997 CSSA convention, Sheila Collette stated that she had never seen a red one in the wild; all are bright green because they hide from the sun and predators under things. Most people give them far too much light. Sheila scolded a famous botanical garden director because his plants were so red. Give your plants plenty of light so they don't etiolate, but don't let them get red. They grow and bloom better when green. Here in Phoenix it is hard to keep them from cooking unless they're well shaded. If you don't put them under the bench, they need at least 70% shade cloth--not 50%. Exceptions are the few, like *Whiteslonea crassa*, that live fully exposed. But, there aren't many like this. I had a *Pectinaria* cook this summer because it got too hot and was too exposed. It was dry. It happened in one day, and the plant turned yellow and soft, but not rotten soft. It was like a cooked carrot.

Water

They can take lots when actively growing and when the night temperature drops noticeably. After

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a dry winter, when they resume growth, I give a few spritzes with the sprayer. When they are in active growth I keep them almost moist using the water wand. This means 2-3 times weekly for me, but I pot small and shallow. I don't lose any plants during the summer and fall growth period, only during the high heat. When it is hot hot hot and humid, be very careful; next year I'm going to move mine to full shade for those few weeks and not water--not even rain. Summer is peak rot season. As the temperatures get really cool, I stop watering entirely until the next spring, and I bring them in for the winter so they aren't rained on or frosted. I almost never heat my house, and I put them in a room that gets afternoon sun but gets down to the 50s at night. They will look terrible by the end of the winter--shriveled and grey--but they won't rot. Some older growths will dry up and die.

Fertilizer

They like it, so use it. I use ammonium sulfate, 1 tablespoon per gallon, about 1-2 times monthly while growing. This is a lot more than some people recommend. Some authors recommend complex three-layer potting mixes with lots of chicken manure in the bottom. I don't have the time.

Pests, problems

Mealybugs. Devastating. I don't even bother with mild things anymore, but go straight to systemic Orthene. I douse all my Stapeliads every spring when I put them out and again every fall about two weeks before I think they're going in for the winter. If I find mealybugs during the season in just one plant, I treat that one plant with Orthene again; if more than one plant is involved, I treat them all. If I find mealybugs during the winter, I douse the plants even though I usually don't water them during the winter. These plants are too expensive and die too easily from mealybugs to use ineffective measures like insecticidal soap or rubbing alcohol, which don't solve the problem anyhow. The mealybugs hide in crevices on the undersurfaces and avoid the sprays. Systemics such as Orthene kill them on contact and also work into the plant, so sucking insects are poisoned as they eat. If I had access to Marathon, another systemic but available only to licensed pest killers or nurserymen, I would use that. If it is growing time and your plants aren't growing, they have mealybugs; treat first, ask questions later.

Rot occurs during the winter if you water and during the hot humid summer if you water too much. It occurs during the spring and fall growing seasons if your plants have mealybugs (see above.) If you have non-mealybug rot, most of the time it demarcates at a joint and you can get at least one good cutting. Just dip in rubbing alcohol and reroot. If you have mealybug rot, treat for mealybugs and reroot.

Notes on a few genera I have grown

I use the old names from White and Sloane. The proposed revision chopping everything up into myriad genera violates lots of taxonomic rules and is to be voted on at the next world congress of taxonomists in St Louis. So far only the English seem to like the new plan, likely because it was proposed by an Englishman.

Caralluma: Mostly upright growers; almost all have stinking flowers. They do extremely well here without special care.

Edithcolea: This grows like a weed here. The rest of the world thinks it's impossible. Its home has a climate almost exactly like ours but warmer in winter and less summer rain, though often more humid. It grows fully shaded and green to fully exposed and red. It seems to do better here shaded in a wide shallow container because it sprawls so. Baskets are nice. It's touchy about too much water during monsoons but will go dormant if you let it dry out.

Hoodia: These come from a climate almost exactly like ours, including a little frost occasionally. In nature they seem to be short-lived plants. I don't think most of us water ours enough during the

Continued on page 12

summer, but I spray only rather than watering in the spring until I see the new growth. Remember, they don't have mealybugs in habitat. Flowers stink.

Huernia: These are recliners and benefit from dividing and repotting. They should grow very strongly and bloom profusely. They don't like sun and are prone to cooking here more than rotting. I wouldn't give more than 30% sun if I wanted to see flowers.

Notechidnopsis: Tiny tiny blooms but the plant looks weird. I grow it like *Edithcolea* but it is much slower.

Pectinaria: Needs less water than most in summer, and can tolerate more sun, but better with mostly shade in my opinion. The risk is heat here. I cooked mine in June because it wasn't shaded enough.

Piaranthus: See *Huernia* for culture.

Pseudolithos: Sensitive to scratches during high humidity, but it grows well during monsoons with a little less water than the others. Doesn't like getting as cold as the others will tolerate in winter.

Stapelia: Sprawling like *Huernia* but each growth is much larger. Generally easy to grow but some (*S. gettlefii*, *S. flavirostris*) are sensitive to water during high humidity. Killed by mealybugs unbelievably fast.

Stapeliopsis: Likes to dry out between watering, but remarkably tough. When a growth of mine rotted, it stopped at the first joint.

Trichocaulon: Similar to *Pseudolithos*, but more forgiving of overwatering.

Last words

Nothing matches the surprise on your succulent-challenged friends'



Leuckhoffia sp. 1998
Natural hybrid between
Hoodia & *Stapelia*

sections on *Melocactus*, the larger flowered *Mammillarias* from Baja California and an Index of genera for Vols. 1-5.

9. *The Instant Guide to Healthy Cacti*, Pilbeam, John (1984, 80 pp., color photos and illustrations) HB What goes wrong... and how to cure it. 32 genera of cacti and their care are featured, including light and temperature, tools for cactus gardening, watering, feeding, soil, repotting, propagation, using insecticides and what goes wrong.

10. *Lithops for the Curious, the Collector, and the Cultist*, Rowlett, Nick, Oregon (1990, 2nd ed., 136 pp. some color photos) SB. One of the rare books on *Lithops* or living stones of the *Mesemb* family. Cultural information, seasonal requirements, a discussion of habitats, anatomy and vegetative propagation, growing *Lithops* from seed, a description of the species, hybrids, preservation, archive correspondence addressed to Prof. Chester Dugdale regarding his research on *Lithops*, various indices and a source directory.

Please feel free to request these and any other CACSS books and/or periodicals by calling or e-mailing me or at the meetings. Library lists are available at each meeting and by e-mail or fax.

Next month look for book reviews with the advanced and experienced collector in mind.

Karen
Kravcov
CACSS Librarian
780-2867
KKravcov@aol.

faces when they see *S. gigantea* blooming-- unless it's their reaction after you suggest they put their nose in the flower for the interesting fragrance. As I mentioned above, extremely easy ones are *Huernia confusa*, *H. primulina*, *H. keniensis*, *Stapelia gigantea* (sometimes called *S. nobilis*), *S. asterias*, *S. variegata* (which the English call *Orbea variegata*) and one I haven't mentioned before but tried last year, *Caralluma baldratii*.

**5th Annual
Mad Doctor's
Halloween Costume Ball**

**Hosts: Leo Martin &
Richard Maxwell**

Saturday October 31, 1998

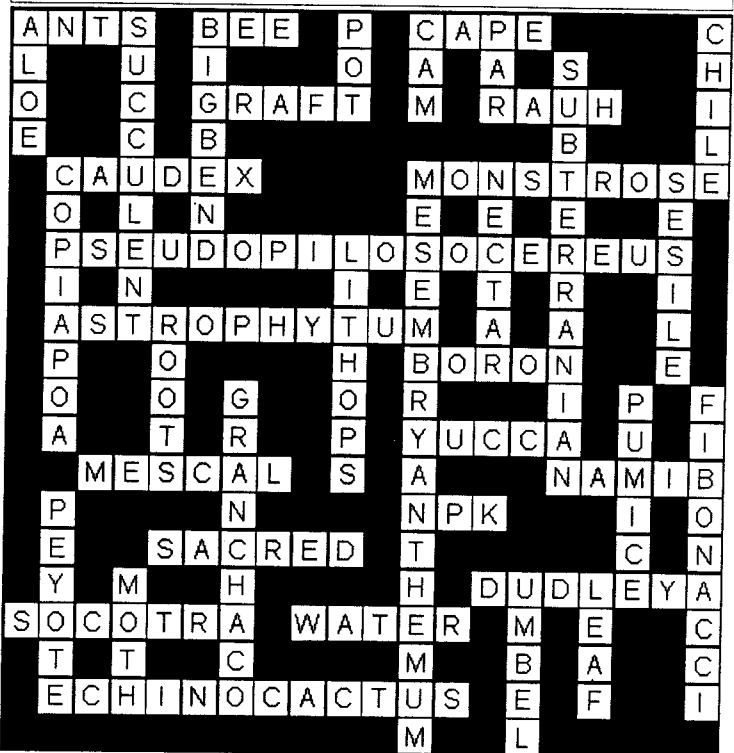
**Food & beverages 6 pm
dancing 8 pm**

**Elks Club, Phoenix
32nd Street & Acoma Drive
North of Thunderbird
RSDP 602-212-6724**

**Costume Required
Only if clothing worn
No glochids Please!**

THE AMATEURS' DIGEST CROSSWORD

Compliments of: <http://www.com/~amdigest/xwordo1.htm>
Answers to last months puzzle.



Central Arizona Cactus & Succulent Society

Meetings held last Sunday of the month

Time: 2:00-4:00 PM

Location: Webster Auditorium, DBG

Silent Auction: Sunday, October 18th 1998

Board Meeting: 1:00-2:00 PM Location: Archer House

Calendar of Events

October 16th - November 1st 8-5 daily

Boyce Thompson Arboretum Annual Fall Plant Sale

Saturday October 17th 1998 9-12 PM

Desert Botanical Gardens Plant Choices for Desert Landscaping

If you are installing a new desert landscape or adding to your present one, there are many things to consider before you start planting. This workshop will guide you in finding the best plants to suit your needs and keep your plants happy as well! Also learn about the great new offerings at the Garden's upcoming Fall Landscape Plant Sale. Advance registration required. Call (602) 941-1225 to register.

Sunday October 18th 1998 2:00 PM

(CACSS) Silent Auction

October 23rd, 24th, & 25th

Desert Botanical Garden Fall Plant Sale Friday 23rd, DBG members

Volunteers are needed from October 21st through the 25th. Contact Edra Drake 955-2531

October 23rd, 24th, & 25th

(TCSS) Sonoran 2 Holiday Inn Palo Verde, Tucson AZ.

A regional Conference sponsored by the Tucson C&SS, includes Show & Sale. Info Carol Clapp, 520-908-9001, PO Box 91560, Tucson AZ 85752-1560, e-mail kitfox@azstarnet.com, FAX 520-908-0396

Saturday November 21st 1998

Boyce Thompson Arboretum Feeling of Fall Festival

Sample the sights and smells of fall. The Arboretum should be at peak color. Sip Arizona apple cider, eat apple pie, doughnuts and enjoy music. There will be displays on fall harvests, demonstrations and special event for kids.

Sunday November 22nd 1998 2:00 PM

(CACSS) Woody Minnich Atacama After El Nino

Thursday November 26th 1998

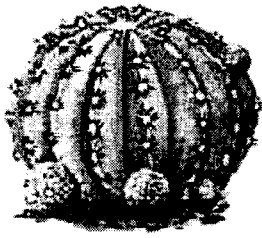
Happy Thanksgiving

December 2nd -5th 1998

Desert Botanical Gardens Las Noches de las Luminarias

December 13th 1998 1:00 PM

(CACSS) Holiday Party Mark your calendar now!



Central Arizona
Cactus & Succulent Society
P.O.Box 8774
Scottsdale, AZ 85252



Sunday Oct. 18th 1998
2:00 - 4:00 PM
Webster Auditorium,
DBG

This is your chance to acquire some unique and wonderful cacti and succulents while supporting your society. We are also seeking plant donations to make this the best sale ever.

(See page 8 for more information.)