

CENTRAL SPINE

NEWSLETTER OF CENTRAL ARIZONA CACTUS & SUCCULENT SOCIETY

SEPTEMBER / 1998

From Our President

Is it fall yet? Seems like it should be with the shorter days, but you know how summer likes to hang around here until October. Nevertheless, I'm seeing a little change in the plants. Some are growing again, others doing a little blooming, and the Mesembs are starting to wake up. I have been giving the Lithops, Conophytums, and the others a little more water in order to entice them out of their summer dormancy. It's kind of a guessing game, when and how much water to give them. They are the group of plants that don't get regular watering like the rest. Instead, I rely a lot on observation to decide about who gets what and who can go until next week. Some Mesembs will swell right up with the first drench, becoming turgid again after the long summer. Others will show no response at all, warning me not to water them for a while longer. They all get going eventually, each at a different time of the fall, but the reward is worth the effort—beautiful and exquisite flowers on and off through the rest of the year and into late Spring, when they enter their dormant period once again.

Now that the ants are back under control, the mealybugs are starting to creep in. They appear as little white dots where little white dots shouldn't be, and if you check your plants every day, as you ought to, you will notice them before the infestation gets too big. I have found Malathion to do a good job of getting the little buggers, but it may take two applications a week apart to be sure. Use the label rate and spray the entire plant in the early evening when it's cooler.

Those of us who attended the August meeting were treated to a tour of three desert parks, courtesy of Regina Rodgers. Regina, ably assisted by her husband Hugh, described the flora and ecological characteristics of Anza-Borrego, Organ Pipe, and Big Bend parks. Not only did she have numerous slides of desert plants and succulents in habitat, but she also had a wealth of maps and literature on the three parks for those wishing to learn more about them. If you are considering a visit to any of these places, I suggest you contact Regina for additional information.

Well, it won't be long now before summer's finally over, so hang in there—the best weather is ahead of us. Don't forget the silent auction in October, and send in those color photos of your plants for our November issue.

See you at the meeting!
Scott B. McMahon

Desert Life, an introduction

http://www.desertusa.com/du_lifeintro.html

Although it may not be apparent to the casual observer, animal and plant life abounds in the southwestern deserts of the U.S. Life is profuse here because both desert animals and plants have acquired special adaptations to solve the dual problems of desert survival -- excessive heat and very limited supplies of water.

Throughout the deserts of the Southwest, availability of water is the most critical factor in sustaining plant life. Local environmental conditions (soil, elevation, latitude, direction, to name a few) are also significant in determining the makeup and character of individual desert plant communities and the various animal species which depend on them for things like food, water, shelter and shade.

The ability to survive the harsh desert environment is often enhanced by mechanisms that involve symbiosis, in which members of both the plant and animal kingdoms live together in a mutually beneficial relationship, each depending on the other for survival.

Considering the many ingenious ways animals and plants have learned to cope with this arid environment, and the numerous types of terrain available, it is really not so surprising that such a large and varied population of life forms inhabits the deserts. But there is one more life form to consider -- humankind.

Humans often play a major role in altering the environment, and nowhere is this more critical than in the fragile, arid regions of the earth. Through human intervention, semiarid lands can easily be turned into desert, and already arid lands can be quickly rendered biologically unproductive.

Desert trees and shrubs are
Continued on page 2

Central Arizona Cactus & Succulent Society

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Scottsdale, AZ 85252

1998 Officers

President	Scott McMahon	657-7786
Vice President	Cathy Babcock	921-9396
Secretary	Deanna Jones	972-3282
Treasurer	Regina Rodgers	974-1105
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Directors	Damon Billings, Jo Davis Ken Jones, Leo Martin Richard Maxwell	

Affiliate Representative Leo Martin

Appointive Offices

Librarian	Karen Kravcov	780-2867
Newsletter	Nick Diomede	258-0736

Central Spine

Deadline for articles and submissions for next newsletter:

October 5th, 1998

Send to:

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Phoenix, AZ 85007

(fax) 258-0736 / desertsegu@earthlink.net

Continued from page 1

often trampled, cut for fuel or overgrazed by domestic animals. Livestock (especially cattle, sheep and goats) can easily destroy grasslands in semiarid regions. Marginal lands are often cleared for agriculture exposing soil to wind and water erosion. And through improper irrigation, saline surface and ground water can sterilize the desert soil with salt and alkali.

When humans no longer maintain a symbiotic relationship with arid lands, when they begin to drastically alter the environment making it less life-sustainable for plants and animals, it is called desertification. The major earmarks of desertification are:

- Declining groundwater tables
- Salinization of topsoil and water
- Reduction of surface waters (streams and lakes)
- Unnaturally high soil erosion
- Desolation of native vegetation
- Loss of natural biological diversity (number of species)

The result of desertification is reduction of biological productivity and impoverishment of ecosystems. While the process of desertification is conspicuous in certain third-world countries, it is not limited to these regions. Ten percent of the U.S. land mass is in a state of severe, to very severe, desertification. Another 20 percent is threatened.

Read more about plant and animal adaptations to the desert environment. Next month: *Desert Animal Survival*.

Good Growing

What's in a name?

This very interesting issue was raised in the June meeting. It was about the importance of botanical Latin to the horticultural hobbyist. In other words, "I got a couple of cactus. Do I need to know that *Mammillaria* stuff?"

I've spent some time thinking on this question since our meeting. I even did some reading. The Punctured Thumb by George Ashley is a classic novice-level book on cactus as a hobby. It's still fine reading for more advanced growers too. The subject of botanical names is raised in the book.

At a point in the hobby, you'll need to communicate about your plants with another grower. This other person could be a salesperson at a garden center, a fellow hobbyist on the Internet, a Desert Botanical Garden staff member, another customer in line with you at Bach's Nursery, or members of our Society. The only reliable method of communication on plant identification is botanical Latin. An example of this communication issue was on the Internet recently. A beginning grower asked for a blind identification of his plant. He pitifully described it as a "green cucumber shape with thorns all over."

Common names are often poetic, descriptive, and unreliable. Latin names may be intimidating, and hard to pronounce, but endure. I was lucky enough to have medical Latin in my family environment, so learning botanical Latin seemed fun to me.

Herein is my best suggestion for learning—make it fun. Pick a small group of plants you like. Learn their Latin names. The translations can be a word game. Take the genus *Astrophytum*—some of the plants are *A. asterias*, *A. capricorne*, *A. ornatum*, and *A. myriostigma*. These names refer to a globular group of plants that resemble stars, goats, ornaments, and a bishop's hat! Somebody had quite a creative imagination to come up with these vivid, descriptive, Latin names. By using mental images to remember the words, you can say bye-bye to boring science.

If you get serious about raising cactus and succulents, or any kind of plants, botanical Latin is a useful tool and essential communication device. I hope you will embrace it.

Salutations,
Debra Korobkin



What is Photoperiodism?

by Marina Welham

<http://www.com/~amdigest/thisthat.htm>

It is something you have to pay attention to if you want your Poinsettia and Schlumbergera (*Zygocactus*) (Christmas Cactus) to bloom. A controlling factor in getting these plants to bloom is the photoperiod or length of time during each day that the plant is exposed to light. A Poinsettia is called a short-day plant because it needs a series of short days and long nights to begin budding. The critical factor is actually the length of the night. The dark period must be total and continuous because even a small amount of light may cause sparse budding or deformed flowers. These plants will not bloom if kept indoors because in the evening they receive light from electric bulbs. You can, however, either put the plants in a dark place at the end of natural daylight hours .. or cover them so light can't reach them. Bring them back to the light or uncover the plants in the morning. After you've done this a few times and realize the procedure is a pain in the neck, you will probably find a better place to put the plants where they will receive only the hours of daylight naturally occurring outside and where electric lights in the house at night cannot reach them.

Nectar-feeding Bats and Arizona's Cactus & Succulents

by Ronnie Sidner, Mammologist

Hosted by TCSS Thursday, October 1, 1998 7 p.m.

Tucson Botanical Gardens

Ronnie plans to discuss the relationship of nectar-feeding bats to the reproduction of certain cactus and succulents in Arizona. She will present some results from her monitoring work on endangered lesser long-nosed bats in the Huachuca Mountains where they feed extensively on Palmer's Agave.

Ronnie Sidner is a self-employed ecological consultant conducting field studies on mammals, primarily on bats. She has completed projects at Saguaro National Park, Buenos Aires National Wildlife Refuge, Kartchner Caverns State Park, and in the Coronado, Coconino, and Apache-Sitgreaves National Forests. She is continuing an 8-year monitoring program to determine resource use by endangered lesser long-nosed bats at Ft. Huachuca, AZ.

Her research was begun in 1980 in Arizona's Sonoran and Chihuahuan Deserts with a field study for her M.S. thesis on "Offspring Sex Ratios for Female Pallid Bats." Adding big brown bats for comparison, Ronnie expanded that project and completed a Ph.D. dissertation at the University of Arizona in 1997 on "Lifetime Mortality and Reproduction of Desert Bats" after following several thousand tagged animals through their lifespans.

Her publications include results of bat studies, range extensions by desert shrews, prey identification from pellets of spotted owls, and manual surveys of public lands.

September and October tips...

Compliments of Arizona Cactus Sales via:

http://www.arizonacactusales.com/tips/monthly_tips.htm

Those damaging winds. We get a lot of phone calls this time of year on plants that have fallen in one of our Monsoon storms. If you lose a tree completely be sure to cover any cactus it was shading before it went down to prevent sunburn. If a limb breaks, re-cut to a smooth surface. Most desert trees will sprout new branches fairly fast. You can always thin out those heavy branches prior to the storm. Again, be aware of the plants the tree is shading. If you have a large (6 ft and larger) saguaro fall down more than likely its gone for good. Usually the weight of the plant crushes its skeleton, and bruises the flesh. The plant will probably rot and die. Additionally, the larger plants are extremely heavy and fairly impossible to pick up off the ground. They usually crack and break when lifts are attempted. Regarding other cacti, if you lose part of the plant, again make a clean cut. Like trees watch for shading, not on other plants, but on the cactus itself. Was that piece shading some portion of itself? If you have questions call the helpful staff at Arizona Cactus Sales, (602)963-1061.

I'm hearing so much on ANTS! I have them too, and also wish they were gone. But then I wouldn't have my lizards and whiptails that I love so much. So, I guess I'll just cut their numbers down a little. Work on detouring the "greenhouse mealybug farming ants" first. I use Diazinon Ant Killer dust, because it's up out of the way from the lizards. Also, I don't like to spray around my potted collection. For those ants who insist on building their mounds where you enjoy standing and admiring your favorite plants...Diazinon liquid! If you keep a spray bottle prepared (always remember to label) you can nab them every time they rebuild in those high traffic areas. I usually leave them for my lizards if they are in a garden and not in a walkway. We will never win the fight, but we can even the score.

It's time to bring up that ugly word...whitefly. I have a reason to believe that with all the rain this winter and mild temperatures that the whitefly season won't be pretty this year. Boy, I hope I'm wrong. The basics on the whitefly are that they ruin our plants by sucking the juice right out of them. First they cut into the main vein of the leaf, and drink all the nutrients themselves (instead of letting the plant have them). Then they secrete a sticky, sappy substance that allows mold and fungus to adhere to the leaf. There are a number of ways to deter them:

- Rinse the underside of the leaves with a powerful stream of water.
- Put water out for them in a pail, so when they go to drink they drown.
- Place yellow paper plates with Vaseline on them around your plants. They are attracted by the yellow color, and then trapped by the Vaseline.

EASY PLANT BIOCHEMISTRY FOR CACTOPHILES

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

PART IV: PHOTOSYNTHESIS

Plants make their own food by absorbing light and using the energy to split water into hydrogen and oxygen. Then, the hydrogen from the water is combined with carbon dioxide from the air to form sugar. The oxygen is released to the air. Without photosynthesis, there would be no food on earth, and all the oxygen would be locked into water or rust. We would have no oxygen to breathe. How plants manage this is fascinating, and the cacti add an interesting water-conserving twist to the whole thing.

Plants use a molecule called chlorophyll to capture red and blue light. The chlorophyll is excited by the light to a more energetic state. Chlorophyll reflects green light, and because plants contain lots of chlorophyll, they appear green. Most plants contain other pigments as well; in the fall, when deciduous plants' chlorophyll is lost, the other pigments can be seen. Some plants make so much of the other pigments that the chlorophyll green is masked during normal growth as well—for example, the purple leaf plum, or the red form of *Euphorbia trigona*. Variegated plants grow with portions lacking chlorophyll; thus, those portions appear white or yellow depending on the underlying pigmentation.

Plants make chlorophyll from amino acids, fats, and magnesium, and the enzymes responsible contain iron. This is why magnesium and iron are important constituents of soil or fertilizer. Fortunately, magnesium is usually abundant enough in soil for plant's needs. Lack of magnesium or iron leads to lack of chlorophyll, which shows up as slow, yellowish (chlorotic) growth. Deficiency of either can be caused by alkaline soil, which locks these minerals into forms plants cannot absorb. This is why cacti don't usually do well in pots crusted with alkaline salts from the tap water.

Carbon dioxide from the atmosphere enters plants through tiny pores called stomata which are usually found on the undersides of leaves. Cacti have these pores on the stems. Once in the plant, it is combined by enzymes inside the cells with organic acids existing in the cells, storing the carbon dioxide for later use. This process is called carbon dioxide fixation.

Chlorophyll is contained in tiny organs (organelles) called chloroplasts inside plant cells. These look like stacks of coins under the electron microscope. Chloroplasts also contain enzymes which help the chlorophyll catch sunlight. Once the red or blue light rays strike chlorophyll, the chlorophyll enters a more energetic state. It has enough energy to split water: from a single molecule containing two hydrogen atoms and one oxygen atom combined together, energized chlorophyll produces the three atoms uncombined. The oxygen atom unites with another free oxygen atom to form molecular oxygen, O₂, which is released into the atmosphere through the pores.

The two hydrogen atoms freed from each water molecule by light-energized chlorophyll are passed along from one enzyme to another until they are attached to a carbon dioxide-acid molecule which was trapped earlier during carbon dioxide fixation. Then, two of these carbon dioxide-acid-hydrogen molecules are combined together by other enzymes to form one molecule of the sugar glucose (also known as dextrose). Almost all life on earth, and certainly all animal life, depends on this, for from glucose and elements absorbed through the roots, plants can make all the other chemicals needed for life: proteins, starches, and fats.

Chloroplasts have their own genetic material separate from that of the host cell. They have their own primitive ribosomes for making their own enzymes. And, they have some enzymes found in no other parts of plants. Biologists think chloroplasts are descendants of bacteria engulfed by ancestors of plants billions of years ago. Somehow a symbiotic relationship evolved, with the host cell providing easy access to food, water, and protection, and the chloroplast providing energy.

Cacti, usually dwelling in arid regions, have many adaptations for conserving water. One of the most interesting is the way they manage their pores. Pores must be opened at some time each 24 hours to admit carbon dioxide for photosynthetic sugar production. This leads to water loss. Cacti decrease water loss by

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PART IV: PHOTOSYNTHESIS

opening their pores only after dark, when temperatures are usually lower. However, photosynthesis only proceeds during lighted hours. Cacti store the carbon dioxide-acid molecule inside their cells throughout the night, then use the stored carbon dioxide to make sugar the next day. The acidity of cactus juices steadily rises during the night, eventually reaching a level approaching that in your stomach. Then, during the day, the acidity decreases as the acids are converted to sugar. Those of you supplementing your cacti with dry ice (frozen carbon dioxide) should remember that cacti start absorbing carbon dioxide after about 90 minutes of darkness.

Some plants from warm climates, specifically members of the family Crassulaceae and some grasses, perform carbon dioxide fixation slightly differently. The acid most plants use to trap carbon dioxide has three carbons. Most plants are therefore known as having C3 carbon dioxide fixation. Crassulas and some grasses use a four carbon acid (crassulaic acid) to fix carbon dioxide, and are known as having C4 carbon dioxide fixation. The advantage to these plants is that the enzymes involved in C4 carbon dioxide fixation work faster as the temperatures rises, whereas the C3 enzymes slow down above about 75 degrees Fahrenheit. In fact, at 110 degrees Fahrenheit, C4 enzymes may fix carbon dioxide twice as fast as C3 enzymes. This is why your crassulas grow so much faster than your cacti at warm temperatures, and why cacti like nights to be cooler than days and frequently go dormant during the hottest months. (Remember that cacti fix carbon dioxide at night.)

I have been informed by Leo that this will conclude our series on Plant Biochemistry for the time being. If you have enjoyed his writing please let Leo know when you see him at our meetings.



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Luke Thirkhill

Erik Anderson

Patricia M. Borg

ASK HARRY

With Harry O'Carpus

Dear Harry: All this talk about male flower parts! What's the difference between a stamen, a filament, and an anther? My boyfriend won't tell me, and I don't know if he's leading me on, or doesn't know himself.

Signed, Confused.

Dear Confused: It's really pretty simple. The stamen is the whole assembly. The filament is the stalk, and the anther sits on top of the stalk and produces pollen. A straight anther, however, is something you may have trouble getting from your boyfriend!

Dear Harry: My girlfriend was over the other night to see my collection and said that I had some bad etiolation. What is etiolation, and how do I get rid of it?

Signed, Worried.

Dear Worried: Most etiolation can be cleared up with a strong dandruff shampoo and by avoiding the sun! Actually, etiolation is caused by not enough sun, and the growing point of the plant stretches out to reach the light. In most cases, the abnormal part must be cut off and the plant placed in a brighter environment.

Dear Harry: I'm rebuilding my 327 Chevy, and I can't decide whether to bore it out .20 or .40 over. What should I do?

Signed, Moore Power.

Listen, motorhead, if you want to find out something about cars, I suggest you get in touch with our resident piston pusher, Jo Davis. She once squeezed 83 horsepower out of a lawnmower by turbocharging it and adding nitrous oxide injection!

Dear Harry: I'm not too sure about one of my friends. He said that I should try cross-pollinating. Isn't that like what Dennis Rodman does?

Signed, Afraid to go in the closet.

Dear Afraid: Not to worry. Your friend merely meant that you should try taking the pollen from one plant and transferring it to another of the same species. You get more genetic diversity this way, and many plants actually require this type of pollination.

Continued from last month...

CACSS LIBRARY BOOK REVIEWS

The CACSS Library has many titles for various interests and different experience levels. However, this month I thought it might be good to focus on some of the books best suited for beginning cacti and succulent enthusiasts. The following books in our library are helpful for the beginning collector particularly for a general overview, the description of both common and botanical names and plant identification and classification:

5. *The Illustrated Guide to Cacti*. Slaba, Rudolf. 1992, 224 pp., 200 color and 120 b&w illustrations) HB. Topics include the origins of cacti, bodily organs, systematic classification and nomenclature, planting, watering, propagation, temperature and lighting, grafting, diseases and prevention, and pests. Very nice color plates of the cacti of North America and South America.

6. *Name that Succulent*. Rowley, Gordon D. (1980, 268 pp. Line drawings) HB. This well-known author and botany lecturer discusses the taxonomy of succulent plants, and how plants are named and classified, including a major key to the succulent families and separate keys to the succulent genera of each family. Also, what to do if you think you've discovered a new species or cultivar, and a good glossary. Recommended as a refresher book for the intermediate and advanced enthusiasts as well.

7. *The Observer's Book of Cacti & Other Succulents*. Scott, S.H. (1975 reprint, 159 pp., 16 color plates and 66 b&w photos) HB. This pocket-sized book describes over 300 species of plants and such topics as how to start a collection, general cultivation, propagation from cuttings and offsets, pests and their control, cristate and monstrous forms, bowl gardens, classification of succulent plants, and a glossary.

8. *Succulents for the Amateur*. Haselton, Scott E. (1955, 172 pp., 400 b&w photos) HB. More than 800 plants are discussed, including general culture.

9. *What Kinda Cactus Izzat?* Manning, Reg (1957, 107 pp.) SB. This is a tongue-in-cheek book in cartoon form about cacti and desert plants of the Southwest ("the cactus belt") and their common names.

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

Karen Kravcov, CACSS Librarian
780-2867 or KKravcov@aol.com

Next month look for book reviews with the intermediate collector in mind.

Nursery Review

Richard Zeh

Baker Nursery
3414 N. 40th Street
Phoenix, AZ 85018
955-4500

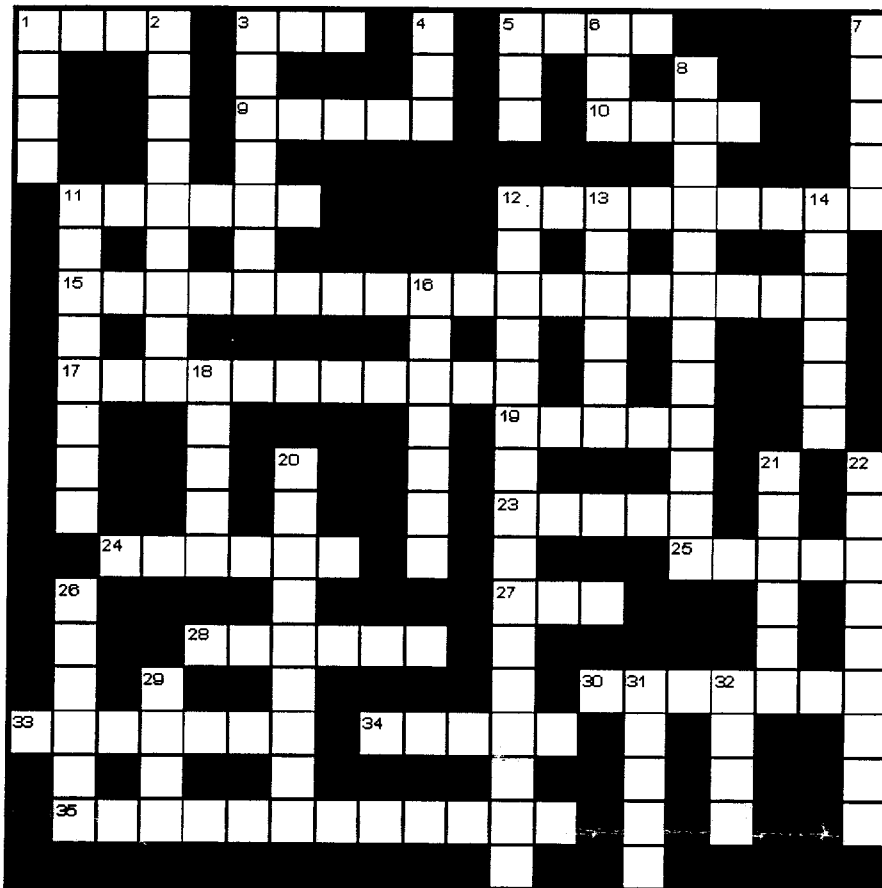
Inventory:	8.0
Availability	10.0
Personality	9.0
Plants	8.5

Baker Nursery is much more of a full service nursery than any of the previous nurseries I have reviewed. They have been tucked away on 40th Street just north of Osborn for many years. This place is great for everything from pottery to soil mixes, pumice to fertilizers. All of the staff are extremely friendly, able and patient. They would have to be to put up with yours truly for eight years. Jim and Collette run a tight ship so the prices are better than almost any retail nursery You'll pay 30 or 40 percent less here than at Berridge Nursery just up the street. They have good cactus and succulent sources from area growers and California nurseries. If you can't find exactly what you want, they can probably order it for you. Because of their service, prices and location, you should stop in at Baker's Nursery often.

THE AMATEURS' DIGEST CROSSWORD

Our thanks to Phillip Allen,
USA for creating this Crossword Puzzle for your enjoyment

Start getting excited!
Get very excited!



CACSS is putting out a special newsletter in November and we want pictures of your favorite, rare or unusual cacti or succulents. We are looking for a color picture or digital image; include its botanical/common name, who cares for the plant and a one or two sentence comment about it. Then wait for your newsletter in November. Pictures must be received by Saturday October 31st, 1998. If you wish, please include a SASE to have the pictures returned or ask that they be returned at the November meeting.

You can mail hard copy pictures to:

Nick Diomede
1345 W. Willetta Street
Phoenix, AZ 85007

Or e-mail digital images to:

desertsegue@earthlink.net

Because of the nature of this project we will not be using black & white pictures.

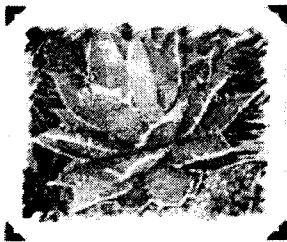
Across

Down

- 1 - Bug ranchers & seed rustlers. (4)
- 3 - Widespread, important pollinator. (3)
- 5 - A floral kingdom, or dramatic wearing apparel. (4)
- 9 - Surgical propagation technique (5)
- 10 - Noted cactus and bromeliad explorer. (4)
- 11 - Enlarged plant organ attractive to many. (6)
- 12 - Type of formal variation, not really frightening. (9)
- 15 - Fake hair? Really? (18)
- 17 - This very popular genus really is a star. (11)
- 19 - Tiresome trace mineral. (5)
- 23 - Unlike the Agave cousins, this genus blooms year after year. (5)
- 24 - Local name for an Agave derivative. (6)
- 25 - African desert rich in species and Atlantic fogs. (5)
- 27 - Plant nutrition basics. (3)
- 28 - Many succulent plants have this spiritual significance. (6)
- 30 - This Crassulacean genus finds protection in California canyons. (7)
- 33 - Arid island habitat, off the Horn. (7)
- 34 - What these plants are so great at saving. (5)
- 35 - Large North American genus often accused of disabling horses. (12)

- 1 - Large southern African genus parallels Agave in form. (4)
- 2 - That hydrated quality we prize. (9)
- 3 - Texan Chihuahua preserve. (7)
- 4 - Basic planting container. (3)
- 5 - Briefly, the carbon cycle typical of succulent plants. (3)
- 6 - Short for the wavelengths of light that drive photosynthesis. (3)
- 7 - Copiapoa homeland. (5)
- 8 - That part under the soil surface. (12)
- 11 - This Atacama genus relies on fog. (8)
- 12 - Mid-day flower, in Latin. (16)
- 13 - The pollinators 'reward'. (6)
- 14 - Describes leaves or flowers attached directly to the stem. (6)
- 16 - Pebbly bits, the Specialite' a' la Cole. (7)
- 18 - Vital organs provide security, water, minerals. (5)
- 20 - Argentine Great Plains. (9)
- 21 - I said 'soil amendment', not 'soap amendment'! (6)
- 22 - Clever mathematical sequences demonstrated by cacti. (9)
- 26 - Geophyte, sometimes sacred, sometimes illegal. (6)
- 29 - Major pollinator of many Agavaceae. (4)
- 31 - Inflorescence form. (5)
- 32 - Usual photosynthetic organ. (4)

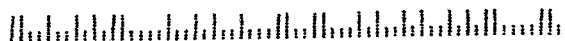
Answers next month, or <http://vvv.com/~amdigest/xword01.htm>



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



85044/1322



Central Arizona Cactus & Succulent Society

Meetings held last Sunday of the month

Time: 2:00-4:00 PM Location: Webster Auditorium, DBG

Next meeting: Sunday, September 27th 1998

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

Calendar of Events

Sunday September 27th 2:00 PM (CACSS) Presentation by Jon Weeks

Dr. Weeks is founder (1975) of Landscape Cacti desert nursery. He received his Ph.D. from University of Arizona in cellular and developmental biology in 1986. He spent a number of years in Mexico doing research and development of seawater irrigable crops, and since 1992 has devoted himself to cultivating cacti for landscape use.

Sunday September 27th 1998 Huntington Succulent Symposium *Huntington Botanical Gardens*

For more information on this event contact: (818) 405-2160

October 3rd & 4th 1998 11-4 daily Tohono Chul Park *Fall Wildflower Sale*

The Fall Plant Sale will feature wildflower seeds and a wide variety of arid-adapted plants suitable for planting in the Sonoran Desert. There will be mini-lectures and docents on hand to give information and planting tips.

October 16th - November 1st 8-5 daily Boyce Thompson Arboretum *Annual Fall Plant Sale*

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*

December 13th 1998 1:00 PM (CACSS) Holiday Party *Mark your calendar now!*