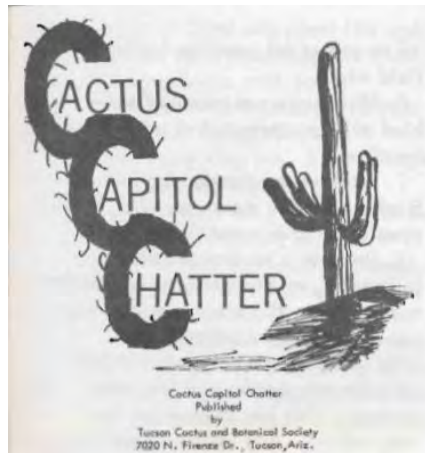




Note - The following issues are not available and we would ask anyone who may be able to provide us with a copy would be appreciated. They can be emailed to the webmaster at the Tucson Cactus and Succulent Society or to the President.

Year - Months Missing

2000 - Jan missing
1999 - Dec missing
1997 - Jan, Feb, Mar, Apr, Nov missing
1996 - Jan, May missing
1995 - Jun, Jul, Aug missing
1994 - Aug missing
1992 - All months except Jul and Aug missing
1991 - All months missing
1990 - All months missing
1989 - All months except Jan and Feb missing
1988 - May, Sep missing



From 1965 to 1982 the Newsletter was named "Cactus Capitol Chatter"

It was published quarterly (4 issues per year)

We are missing 1982 - 3rd and 4th quarter publications

Desert Breeze

Volume 2, Issue 1

May 1997

Program Dates May to October

Thursday May 1

Thursday June 5

NO MEETING JULY
(CSSA Convention
instead !!)

Thursday August 7

Sunday Sept 14
Silent Auction
(Time TBA)

Thursday Oct 2

Meetings held at
7 P.M. at the Tucson
Botanical Gardens
unless stated other-
wise

President's Message

Welcome to our "new" newsletter. Congratulations to Carol and Maury Clapp, editors, for their first publication of the **Desert Breeze**. This is YOUR newsletter, and your contributions of notes and articles will make it a real success.

All of us thank Cindy Beckley for a GREAT JOB on the '96 editions of the **Desert Breeze**. *Cindy, you came through when we needed you!*

There are a lot of opportunities for all members to increase participation in Society activities.

Our plans for the next year or so need your support. Here are some ways you can help. Manage the raffle and door prizes at regular meetings. This is a great way to meet each member, help out at the meetings and it's easy work.

Plan a tour of members' gardens or Nurseries. There are always members who have not visited all the great places in the Tucson

(Continued on page 2)

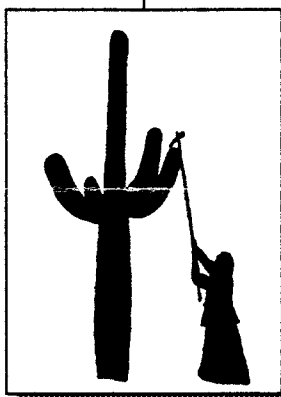
CSSA Convention July 5 - 12 San Diego

At least six or seven of our members have booked already for the 27th Biennial Convention of the Cactus & Succulent Society of America. If YOU are still thinking about it, HURRY and get your reservations made. After May 15, the registration fee for CSSA members goes up to \$215.00 (non-members of CSSA \$225.00). You will need to make your own hotel reservations. The Convention is being held at the Town & Country Hotel, telephone number 1 (800) 77-ATLAS, and if you stay there for the whole convention you may ask for the special \$75.00/day rate.

There are lots of lectures, show

visits, nursery tours, habitat tours, wild animal park visit, etc. to choose from. **HURRY!!**

Contact: Mindy Fusaro,
CSSA Convention Registrar, PO Box 35034
Des Moines, IA 50315-0301
Telephone: (515) 285-7760
e-mail: mpfusaro@aol.com
or write to the CSSA Convention Chairman,
Richard Bernard, 780 Cole Street,
San Francisco, CA 94117



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Tucson Cactus & Succulent Society
Founded 1960

OFFICERS AND BOARD 1997

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NEWSLETTER EDITOR:

Carol Clapp 908-9001



Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society

Please send your articles, contributions,
suggestions, or announcements
you would like to make, to the Editor,

Carol Clapp
P.O. Box 91560
Tucson
AZ 85752-1560



Wanda Horst d. February 9, 1997

It was with great sadness that we heard of the death, in hospital, of long time TCSS member, Wanda Horst.

I had known Wanda for 25 years, back to the time when Josephine Shelby edited your newsletter "Cactus Capital Chatter". I remember how we and her husband, Carl, used to travel around looking at the cacti and the birds. Carl was a great photographer in the field. He died some years ago and Wanda then moved from the west side into Tucson. She often spoke of her pet snake which would curl up upon her lap when they lived on S. Joseph, and how annoyed she was when someone, looking after their home whilst they were away, had killed it.

After a brief spell living on N. Venice, Wanda moved to E. 22nd St. with her companion Gil Barratt, also a TCSS member, who predeceased her by twelve months. Maury and I flew here for his funeral, and to comfort Wanda. After that time, Wanda lost a lot of weight and became even more sick. Only last November she moved into the Manor at Midvale with her two beloved cats, Corky and Pateta, and a few potted cacti. Wanda would be so happy to know that her cats are now living very comfortably in a new home with a retired lady and her two other cats.



CC

(Continued from page 1)

area and we haven't been to Phoenix and vicinity in a long time. We have great members there and a lot of friends in the Central Arizona Society.

Take part in the CSSA Convention in San Diego. There will be a lot of Tucson members at the convention. The more, the merrier.

In September, we will have our silent auction. Julie Turko is chairing the event and would certainly appreciate your help. Call her and ask how you can help. This is going to be a great event. Julie did a terrific silent auction at the Stuck on Tucson Mini-Conference.

Speaking about Stuck on Tucson, the board has approved it for fall of '98. If you want to have fun, learn a great deal and participate in Society activities, this is the place to do it.

Let's have a great year!

Dick Wiedhopf
President



Did you see that the Saguaro National Park, west side, recently had some thirty airline workers helping remove non-native vegetation which is endangering the growth of the saguaros?

I wonder if the plants they removed included those "Four aggressive plant invaders" which Greg Starr wrote about in the latest issue of the Tucson Botanical Gardens NEWS. These 'invaders' are fountain grass (*Pennisetum setaceum*), buffel grass (*P. ciliare*), lilyweed (*Asphodelus fistulosus*) and desert broom (*Baccharis sarothroides*). The desert broom is a native opportunist which invades any disturbed soil.

Maybe it would be good if we all knew what these 'weeds' look like so that we can be sure to keep them well under control in our yards? Get a copy of the May/June issue of TBG NEWS and find out more.

Thank you, American Airlines staff, for your volunteer help in twenty of our wonderful national parks.

C.S.S.A.

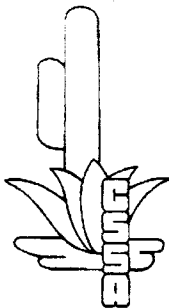
The Cactus and Succulent Society of America (CSSA) was created to promote better understanding and appreciation of these extremely fascinating plants.

The CSSA Journal and Newsletter is issued bi-monthly and is internationally recognized as an outstanding publication. The Newsletter included with it lists activities of affiliate societies, such as TCSS, and a calendar of events. While most members are amateurs, others are world famous scientists, commercial growers and educators. Novice growers are always welcome.

To join the Cactus and Succulent Society of America, send your name, address, telephone number (optional), with a check for \$35.00 for one year's membership, to:
CSSA, Inc.

P.O. Box 35034, Des Moines, IA 50315-0301

TCSS member, Norma Beckman, is our appointed representative to the CSSA and will be happy to help you with joining the CSSA, when she is well enough to come back to meetings again.



Welcome New Members



Bill Bass	760-0890
P.O. Box 32272, Tucson, AZ 85751	
Skip and Cindy Brown	749-6098
11200 E. Sunrise Ranch Pl, Tucson, AZ 85749	
John and Joan Eddy	825-8630
1070 E. Ritz Court, Tucson, AZ 85737	
William Aymard and	
Barbara Eiswerth-Aymard	327-9833
2301 N. Madelyn Circle, Tucson, AZ 85712	
Marty Harow	531-9430
P.O. Box 68320, Tucson, AZ 85737	
Dr Sidney Levy and Bobette Levy	577-7381
4735 N. Paseo Tubutama, Tucson, AZ 85750	
Bridget Lynaugh	760-0357
4962 N. Valle, Tucson, AZ	
Robert Macer	795-1430
2945 N. Flanwill Blvd. #8, Tucson, AZ 85716	
Paul Magoon	-
1054 E. Royal Oak Rd., Tucson, AZ 85737	
Quent Quiner	790-2411
602 N. Ruston Ave., Tucson, AZ 85711-1641	

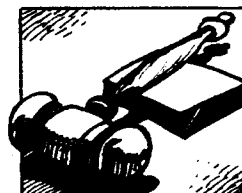


Board Meetings for the rest of 1997

June 19

August 28

October 23



Time and Place:

7 P.M. College of Pharmacy

Check front door for room location

We are always unhappy to learn of members who are unwell. Please will you each call the editor, Carol on 908-9001, when you hear of a sick member, so we may have the opportunity to wish them well.

As this issue goes to the printers, we hear that our dear member, Norma Beckman, has been in hospital again.

We send you our very best wishes, Norma, and hope you will soon feel better and be able to come to our meetings again.



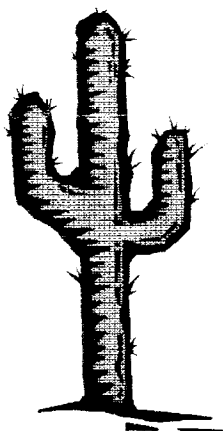
Notes from the TCSS Board Meeting of April 16, 1997

One of the things decided upon was that we should have in our newsletter, **Desert Breeze**, a regular feature for news from the local nurseries and other businesses owned by TCSS members and which might be of interest to cactophiles (and succulentophiles). Maybe a nursery might have a rare plant which many of you would like to buy and this would be a good way of letting you know it is available. Or maybe a new stock of just-published books is due to arrive at our local book sellers. This feature would be a way of keeping you informed - see announcement in next column. These news items can include a notice that someone is clearing out their plant house and has plants which need re-homing.

It was agreed that the TCSS should run another mini-convention in the Fall of '98.

Members will be requested to think about our having a web page on the internet.

Members will be asked if they would like to invite other members to see their collections in Sept/Oct.



Gentry's AGAVES



Mary Odette, one of our Board members has just told us that the Director of the University of Arizona Press called her with good news about Howard Scott Gentry's Agaves of Continental North America, and we quote part of the letter she has sent to her clients:

"The U of A Press will reprint Dr. Gentry's book - if I can provide them with 200 prepaid orders.

The book will be clothbound and retail for \$110.00. The presses will roll when I let the U of A know that I actually have the 200 prepaid orders in hand. I will then receive the first 200 books that they print. From the date I advise them that I have these 200 orders until the actual date the books are available to ship will be approximately 4-5 months. I anticipate having enough orders by June or July 1997, and thus November/December 1997, is my target date for shipping.

In order to help 'push through' the reprinting of this book, I will offer a discounted price of \$100.00 to those who are willing to prepay. If you are interested in ordering this great book, which has been virtually impossible to find in recent years, please send your check, made payable to Mary Odette, for \$100. AZ residents, please add sales tax of \$5.00. Shipping is \$3.50 for the first book and \$1.50 for each additional book. Otherwise you may pick up your book from me when it comes in.

P.S. Should anything unforeseen occur that prevents the reprinting of this book, I will issue you a full refund."

Mary Odette
Mary Odette Books,
3831 North Cherry Creek Place, Tucson, AZ 85749
Telephone (520) 749-2285
odette@azstarnet.com

Gordon Rowley in Star Wars?

Did you know Gordon Rowley* has interests other than cacti and succulents? We had the good fortune to visit with Gordon at his home a few weeks ago. He was well and entertained us with his usual great enthusiasm. We also met his functioning companions, R2-D2 and Jedi, both made out of "Erector Set". His collection of cacti had some very interesting plants and techniques to see. Do you have a huge *Opuntia* tree that you don't really know what to do with? Why not cut holes in the pads and place smaller potted plants on the 'shelves' as Gordon had done? (See photo on the next page.)



Maury Clapp, R2-D2 and Gordon Rowley

Another interesting, and very rare, plant was a grafted cactus,

red without chlorophyll, which had hybridized with the stock and produced a *natural chimera***?

On our visit to the Reading University greenhouses, we saw some collections of succulent plants being used for research purposes. A plant we will be unlikely ever to see again was the succulent which grows only on the sheer, high cliffs in Hawaii. Botanists fear it will become extinct as its natural pollinator appears to have disappeared from habitat, so they are abseiling down the cliff faces in order to pollinate the flowers in the hopes of getting seed. The specimens at Reading were grown from some seed received there. A few weeks ago a program on television showed the botanists in Hawaii pollinating these plants, which look similar to giant *Cissus*.

Another treat was in store for us! We saw the color proofs of "The History of Succulent Plants" which Gordon has been writing for most of his life. What a beautiful book this will be! And even more interesting to those of us who enjoy the chronology sections in plant books. "The History of Succulent Plants" really is on its way.

* A note about Gordon Rowley for the benefit of newcomers to the hobby: Gordon is a retired Professor of Horticulture at Reading University in England. Currently he is President of the British Cactus & Succulent Society. He has written many books on succulent plants, including *Caudiform* and *Pachycaul Succulents*, *Succulent Compositae*, *Name that Succulent*, and many more, and is just completing his work on *The History of Succulent plants*.

** A chimera is an artificially produced individual having tissues of several species. A naturally occurring chimera is extremely rare. Also, chimaera.

The History of Succulent Plants

Gordon Rowley
to be published by
The Strawberry Press
227 Strawberry Drive
Mill Valley
CA 94941

Tel: (415) 388-5017

Fax: (415) 380-9628

Agaves for Arizona Gardens - A Report by Helen Housman on the Workshop given by Kent Newland in October 1996 at the TCSS Mini-Convention

I enjoyed Kent's talk very much. He gave us a very interesting booklet (which he had compiled) on "Agaves for Arizona Gardens" which contained the following:

1. Botany and ecology - an overview of the botanical aspects and pollination ecology of Agaves.
2. Geography and taxonomy - the geographical distribution and classification of Agaves.
3. Ethnobotany - aspects of the man-agave symbiosis.
4. Horticulture - propagation, culture, pests and horticultural considerations for Agaves.
5. Landscape architecture - landscape design consideration and selection of Agaves for Arizona Gardens.

There was also a wonderful display of plants - thanks to Dan Birt.

I was glad I had the opportunity to attend Kent's workshop. Agaves are one of my favorites.



This is part of Gordon Rowley's Opuntia (see page 5) in which he carved a hole and made a shelf in it, upon which to place a smaller potted succulent.

And here we have a photo taken at our last Christmas party.....Harrison Yokum and A. F. LaScala are having an animated conversation.



TCSS Program for the next few months

Meetings are at 7 P.M. at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson 85712 unless stated otherwise. Non-members Welcome!

Thursday May 1 Speaker - *Greg Starr* will take us on a journey to see the various species of "Agaves, Yuccas & Dasylirions of Mexico". Greg graduated from the University of Arizona with a Bachelors In Horticulture and a Masters in Horticulture. He worked for Warren Jones and learned a lot about collecting and testing plants. Greg opened Starr Nursery in July 1985 and has been collecting, testing and introducing plants from Arizona and Mexico into the market since the inception of his nursery. He has written several articles for the journal DESERT PLANTS and given talks on new plants for Southern Arizona landscapes. He also writes a regular column in the Tucson Botanical Gardens' newsletter.

Please will members whose names begin with A to D bring the refreshments this time.

Thursday June 5 Speaker - *Carl Olson*
"Insect Interactions with your Cacti and Succulents". Refreshments E - N

Thursday Aug 5 Speaker - *Jon Weeks*
"Brief botanical tour of arid land plants of Nuevo Leon and Coahuila" Refreshments O - Z

Sunday Sept 14 Silent Auction, chaired by Julie Turko. Time to be advised. Call Julie on 578-1666 with your offers of help for this event.

Thursday Oct 2 Speaker - *Kent Newland*
"The Genus Mammillaria"

November to be advised

December Christmas Party



Other events to interest you

Some of these events are quite a long way away from Tucson but, as some of you travel the country, it is nice if you know what is going on elsewhere. It is suggested that you check dates and venues before travelling a long distance.

May 4 Epiphyllum Society of America Show & Sale, Arboretum of Los Angeles Cty.

May 17/18 Gates C&SS Show and Sale, San Bernardino Museum, 2024 Orange Tree Lane, Redlands, CA. Info: Diane Park (909) 735-0677

June 7/8 San Francisco Show and Sale, SF County Fair Building, 9th Ave/Lincoln Way. Info: Richard Bernard (415) 665-8101

July 1-5 Pre CSSA Convention Baja Tour, "Boojums & Boulders". Call Baja Discovery, (800) 829-2252

July 5-6 CSSA Show and Sale, Huntington Botanical Garden, San Marino CA. Info: Duke Benadom (805) 526-8620

July 7-12 CSSA Convention, San Diego. See page 1 of this issue for details.

July 12-18 Post CSSA Convention Tour, "Transpenninsular Trek", 700 miles. Call Baja Discovery, (800) 829-2252

August 16/17 Inter-City Show and Sale, Arboretum of Los Angeles County, 301 N. Baldwin Av., Arcadia, CA. Info, (310) 599-1146

Why not join the Cactus & Succulent Society of America and get to hear of all these super events first-hand?

See page 3 for details.

Aloes - a report on our meeting of April 3, 1997

Gene Joseph gave an excellent program on Aloes. He encouraged us to grow them outdoors and named those which he finds grow successfully in this area.

Aloes used to be in the Liliaceae family, but have since been reclassified as Asphodelaceae, the currently accepted family name, preferable to Aloaceae, which some botanists have suggested should be used.

The beauty of Aloes is two-fold - the plant itself, particularly the 'stem' Aloes, and their spectacular flowers. There are three types of Aloe: the tree Aloes which have a distinct trunk, such as *dichotoma*, *ferox*, *marlothii*; the caulescent Aloes, without stem, like *variegata*, *saponaria*; and the grass Aloes which have thin leaves and don't do so well outside in our hot summers. Generally, the Aloes which come from South Africa and the Arabian peninsula do well here. Aloes, as a group, are damaged in the high to mid twenties fahrenheit. Being fast growers, they soon recover from minor damage from the cold. They do not like intense heat, when temperatures rise to 107 deg F - 110 deg F, particularly if they are in clay pots in the sun. Gene waters his Aloes once a week in spring and once in two weeks in the summer. He stressed the importance of cutting back water (to Aloes) in the summer, and keeping the pots shaded. The plants will turn reddish in color and may even look a little stressed.

Gene recommends sowing Aloe seeds in summer, starting them outside at the beginning of the summer rains. Store seeds for no longer than three to four years as the viability goes down after that time. If frozen, a seed's viability will survive longer. Gene uses regular potting mix, well drained, for seeds which he puts on the surface of this mix and then covers the seeds with up to 1/4" of pumice. Other coverings can be used, such as fine grit, but pumice is good because it is light in weight which enables the little seedlings to find their way up easily.

On the subject of a real pest - Aloe mite, Gene said that it is a subcutaneous mite which damages the growing point of plants. When this growing point grows out it looks cancerous and monstrose. It is seen very often in Aloe *saponaria*, the Aloe growing all over town - maybe such large masses of plants are conducive to this mite, which is blown around by the wind here. The damage caused by these mites is usually seen first on the inflorescence. The best thing to do is to get rid of the diseased plant. If you don't want to do that, it can be treated - Cygon once per week for three weeks, or a single

shot of Oxyimil. Both of these are systemic insecticides and should be used according to the instructions on the container.

If you don't want a big plant, grow it in a pot; if you want a larger plant, put it in the ground.

After the introduction, Gene showed some slides of his plants.

Aloe variegata, lots of beautiful flowers, a large distinctive fruit, and more cold tolerant than some other Aloes. Does not like the summer sun. Suggests this species should be planted on the east side of a tree, for example, so that it gets morning sun. A great hummingbird plant.

Aloe ferox, spines under the leaves. Similar to *A. marlothii* which has spines on both top and underside of the leaves, and *A. candelabrum*, with spines only on the topside of its leaves. Aloes hybridize readily, both in cultivation and in the wild, and there are many hybrids around between *ferox*, *marlothii* and *candelabrum*.

Aloe africana is unique in that it has curved flowers on the inflorescence stem.

Aloe sinkatana, a clumping type, is good for landscaping here, and it also has a variegated form.

Aloe parvula is particularly good as a potted plant, each rosette only 5-6" diameter, ideal as a clump in a 12-14" pot. Other good ones include **Aloe rubroviolaceae**, **A. conifera** with yellow flowers, **A. speciosa**, the most beautiful of the tree aloes growing to 8-10 ft. The new buds are red and, when open, are a creamy green with dark brown stigmas.

Aloe glauca is fine with full exposure.

Aloe aristata has been proven to be undamaged at only 11 deg F.

A. pratensis is a good compact flowerer.

Aloe suprafoliata and **A. candelabrum** do well here too.

Aloe plicatilis, a beautiful plant, is very sensitive to the heat of our summers.

Aloe angelicae with its arching leaves resembles candy corns at Halloween.

Aloe castanea has yellow, unbranched inflorescence, with the florets in a spiral pattern up the stem.

Aloe candelabrum has red buds,

Aloe claviflora has club shaped flowers and is happy in full sun, with some afternoon shade.

(Continued on page 9)

Books on Aloes.....

G.W. Reynolds' book *"The Aloes of South Africa"* is the 'bible' on this subject. It was first produced in 1950 and has since been revised and reprinted. Occasionally, used copies can be obtained from specialist booksellers.

Barbara Jeppe's book on *Aloes* has lots of watercolors of Aloes. Again, the original edition is long out of print, but occasionally can be found in specialist

issued *Aloes of* by Ben- and on Smith is readily available in its first edition, 1996. This user-friendly book makes Aloe identification easy.

(Continued from page 8)

Aloe peglarae can take full exposure.

Aloe karasbergensis, similar to *A. striata*, can take full exposure and will flower on the hottest day, and rarely flowers in winter.

Aloe dichotoma, one of Gene's favorite Aloes, usually branches at 5-6 ft and can reach 25-30 ft in height.

Aloe marlothii does best when planted on the east side of a tree.

Aloe hereroensis usually grows as a single rosette.

Another of Gene's favorites is *A. ramosissima*, which develops a caudex at the base of its stem.

Aloe divaricata, clumping species, has red spines along the edges of its leaves, and the hummingbirds really like its flowers.

Aloes comosa and *gariensis* turn nearly all red, which is a natural reaction to intense light, heat or low temperatures.

Aloe longistyla, like *A. variegata*, has huge seed pods. The seeds are a light tan color, with wings, causing the distribution of seeds to be effected by the wind.

Aloe ibitensis, one of the "viney growth type Aloes" has soft, glossy green leaves, and is similar to *A. ciliaris*, both good in shady situations.

Members had brought along some Aloe flowers and leaves, for Gene to comment upon. Gene concluded his presentation by showing some books on the subject of South African Aloes - these books are listed on the left.

Kenny Dugas from Chandler won the door prize - a magnificent *Aloe ramosissima*.

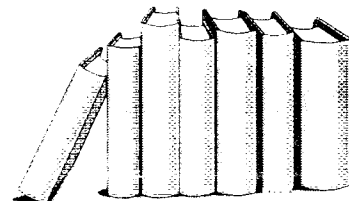
TCSS Dues

of \$15.00 (\$20.00 per family) should be sent to TCSS Treasurer, Arnold White, 4755 N. Camino Gacela, Tucson, AZ 85718

Club Library

The library books of the Tucson Cactus and Succulent Society are housed at Gene Joseph and Jane Evans' nursery at Plants for the Southwest on Blacklidge at Stone.

If you have a book in mind you would like to borrow - for one month - then call our Librarian, Myrtle Ethington on 887-4507, and she will bring it along to the next meeting for you. Alternatively, you can go to the Nursery and check out, and in, the books you want to read. Plants for the Southwest, 50 E. Blacklidge Drive, Tucson, is open Wednesday thru Saturday, 9 A.M. to 5.30 P.M. Telephone number: (520) 628-8773



Booksellers who sell used books - and new ones, too - on cacti and succulents

Mary Odette, TCSS Member (520) 749-2285
3831 North Cherry Creek Place
Tucson, AZ 85749

Brooks Books (Phil Nesty) (510) 672-4566
P.O. Box 21473
Concord, CA 94521

Myron Kinnach (818) 334-7349
5508 N. Astell Ave.
Azusa, CA 91702

Rainbow Gardens (619) 758-4290
1444 E. Taylor St.
Vista, CA 92084

NEXT MEETING

**Thursday, May 1 at 7 P.M. in the Porter Room at the
Tucson Botanical Gardens
2150 N. Alvernon Way, Tucson, AZ 85712**



Greg Starr speaking on

“Agaves, Yuccas & Dasylirions of Mexico”

Refreshments by those with family names beginning with A - D

Desert Breeze

Volume 2, Issue 2

June/July 1997

CSSA

Convention

San Diego

July 5 - 12

Book today

before cost

goes up.

CALL NOW -

Martin Mooney

(619) 232-3821

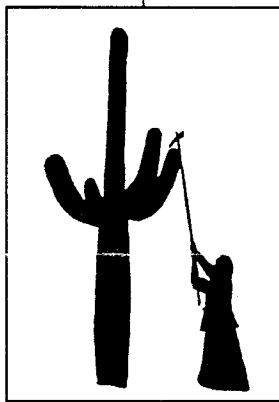
Ext 247

President's Message

PLANT MEMORIES

Over the past 30 years, I have grown, cared for and killed more plants than I can remember: actually, more plants than I want to remember. So, I was out watering this morning and thinking about what to write as my message for this issue when, all of a sudden, I backed into an Agave. It jarred my memory, and I thought about who gave me that plant, or how I acquired it, and some wonderful, sad, and happy memories appeared.

Alan Blackburn, now deceased, was a life member and the backbone of the Society in the 60's and 70's. He held classes for new members on all phases of growing cacti. My wife, Pat, took his class in the early 70's and her seed grown Cleistocactus is now in bloom. I thought, what a wonderful tribute to Alan, that a class project



would still be producing fond memories. My *Lophocereus schottii* is getting ready to bloom again. It is a good size with at least two blooming stems. When I got it in the late 70's it was only a single stem about 2 feet tall. Ken Hartsock, a former treasurer of the society and I played hooky from work one day to go to a yard sale held by the Meredith's (former secretaries). They were one of the first members that Pat and I met when we joined the Society in 1970-71. They were so genuinely enthusiastic about young new members and made us feel so welcome that from the very beginning we felt a part of this Society. Well, they moved back to Minnesota and Ken and I bought a lot of the specimen plants from their yard. It was great fun.

Ken was my banker and friend. He called me in late December years ago and said that he had some great golden barrels that he took off Danny Bach at a great price, did I want some? Of course!

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Tucson Cactus & Succulent Society
Founded 1960

OFFICERS AND BOARD 1997

PRESIDENT: Richard Wiedhopf 885-6367
VICE-PRESIDENT: Margaret Pope 795-1285

SECRETARIES:

Carol and Maury Clapp 908-9001

TREASURER: Arnold White 577-1348

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(terms expire December 31 of year indicated)

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Mary Odette 1999

Julie Turko 1999

AFFILIATE REPRESENTATIVE TO CSSA:

Norma Beckman 885-0669

NEWSLETTER EDITOR:

Carol Clapp 908-9001



Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society

Please send your articles, contributions,
suggestions, or announcements
you would like to make, to the Editor,
Carol Clapp
P.O. Box 91560
Tucson
AZ 85752-1560

(Continued from page 1)

So the whole family went over to Ken's, looked at his collection, chatted with his lovely wife, Marge, and I dealt with him on a dozen golden barrels. A week later Ken was murdered in a bank robbery while trying to protect one of his tellers. Those barrels have some real meaning.

When a plant is a surprise gift it is never forgotten. Two such gifts immediately come to mind.

My wife gave me a Pachypodium in 1979, as a thank you for being the nursemaid when she and all three children had the chicken pox. It's funny how you associate a plant with events. She got the plant at a store on Tanque Verde Rd. that I kept talking about, called Arid Land Plants. Chuck Hanson, the owner, picked it out for her knowing that I would really like it, and I have enjoyed it every day for 18 years. The three of us got together again to work on the CSSA convention in 1995. *What Fun!* The lives of plant people seem to be inter-twined.

The other gift which comes to mind is a wonderful Mammillaria which Dan Birt surprised me with at the TCSS Holiday Party in 1995. I was so taken back by the plant and the thoughtfulness in which it was presented, I was speechless. Every time I see the plant, it makes me smile.



*Go out in your garden
and see how some of
your memories are
doing.*

Dick Wiedhopf
President, TCSS

Scholarships for Campers - the 1997 TBG's Summer Program for Children

The Tucson Botanical Garden (TBG) is having some super programs for children this summer. They will be happy to accept donations of any amount to assist a child, recommended by its parent or teacher, who would otherwise not be able to take part. Children from 1st grade through 6th grade may participate.

For the youngest three grades there is "Let's Grow", a program to teach children about seeds, flowers and plants in the garden. "Critters in the Garden" is another program for the younger ones about bugs, and this includes an evening of exploring in the TBG for night critters, as well as cooking with native foods. For the 4th and 5th grades, there is "Grow Creative"; this is about plants for the kitchen, and with some hiking in the Catalina Mountains. For the older children the "Sonoran Explorers", a joint project with the Tohono Chul Park and the Arizona-Sonora Desert Museum, featuring desert plants, animals and



"Maybe just one
will become a
botanist and write
about cacti...."



people AND an overnight campout.

DATES: All these programs will be taking place during June, July and August.

Would YOU like to sponsor a child? The TBG suggests that \$50 is needed to sponsor one child. However, they will be only too happy to accept donations of any amount which will all help to assist children attend these exciting programs. Who knows? Maybe just one of them will develop a particular inter-

est in cacti and become a botanist in the future! Maybe even write a monograph on our favorite genus!



For more details contact:

Judy Davidson, Development Director, Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson, AZ 85712

Where the Desert Comes to Life

Desert Botanical Garden Phoenix

More than plants, an entire world. A visit to the Desert Botanical Garden offers more than just an understanding of the extraordinary plants that inhabit the arid regions of the Earth.

Surrounded by rugged red cliffs, the 145 acre Garden comprises one of the most complete collections of desert flora in the world. This Garden is home to over 20,000 plants representing nearly 4,000 species and is a renowned research facility.

DESERT BOTANICAL GARDEN
1201 N. Galvin Parkway
Phoenix, Arizona 85008
(602) 941-1217

ADMISSION: Adults \$6.00, Senior Citizens \$5.00
Children 5-12 \$1.00
Under 5 Free

HOURS: 7 a.m.-10 p.m. (May - September)
8 a.m. - Sunset (October - April)

COPY DEADLINE

Desert Breeze

20th of preceding month for the next month's issue, i.e. 20th July for August issue, but you don't have to wait until then to send it! *Please* send your copy as soon as it is ready to Carol Clapp,
P.O. Box 91560, Tucson, AZ
85752-1560.

LATE NEWS OR CHANGES

Call Carol on 908-9001 or
e-mail: kitfox@azstarnet.com

The Human Moths

In last month's **Desert Breeze** we mentioned a succulent plant which grows on sheer cliffs in Hawaii. Thanks to Gene Joseph, who reminded us of its name, *Brighamia insignis* is the plant we wrote about - see page 4 of May issue. The June 1997 issue of **ESPINAS Y FLORES**, the newsletter of the Cactus & Succulent Society of San Diego, contains an extract from Stephen L. Buchmann & Gary Paul Nabhan's book "The Forgotten Pollinators", 1966, Island Press/Shearwater Books, Covelo, CA, about this same plant. We think you will be interested to read this short extract.

"...as William Stolzenburg of The Nature Conservancy has documented for two Hawaiian species of *Brighamia*. The two rosette-forming plants are collectively known from barely more than 120 individuals left in the wilds of Molokai and Kauai. They rarely set seed any more unless they are hand-pollinated by what Stolzenburg describes as the 'death-defying acrobatics of human moths'. The human moths, in this case, are biologists from the Hawaiian Plant Conservation Center who rappel over the brink of 3,000-foot precipices above the sea. Then, hanging from ropes, they brush precollected *Brighamia* pollen onto the stigmas of the few trumpet-shaped flowers growing out from the world's tallest sea cliffs.

These biologist-acrobats are trying to play the role once played by the native pollinators that *Brighamia rockii* and *Brighamia insignis* have lost over the last two centuries. Today, only half of Hawaii's original set of nectar specialists persist - and many of the remaining nectar-feeding birds, from the Hawaiian *alala* crow to the crested *akohekohe* honey-creeper, are officially listed as threatened or endangered. Stolzenburg reminds us that the idea of linked extinctions suggest that one species' demise is triggered by that of its evolutionary partners. "If ever there might have been a state set for exhibiting linked extinctions," he concludes, "Hawaii was it."

Hermann Jacobsen gives the following description:

"*Brighamia* A.Gray. Campanulaceae. - Hawaii. - Greenhouse, warm. Propagation: seeds.

***Brighamia insignis* A.Gray. - N. cliffs on Kuauo and Molokai. - Caudex thick and succulent, up to 1 m tall, tapered to a broad, almost spherical base; L. fleshy, entire, in a terminal lettuce-like Ros.; Fl. with a long tube, white."**

Above extract was taken from the Lexicon of Succulent Plants, English Edition, 1974, by Hermann Jacobsen.

And now the \$64,000 question....

Does anyone have a photograph of *Brighamia insignis*?

Or a plant?

Welcome New Members

Mr Jerry Daharsh and

743-9963

Ms Jean Lewis

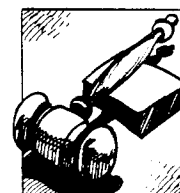
2941 W. Camino Camelia, Tucson, AZ 85745



Next TCSS Board Meeting - June 19

Time and Place:

- 7 P.M. College of Pharmacy
- Check front door for room
- location



Our *Peniocereus greggii* put up its first flower this year the night of May 18. Does anyone else have one in full bloom yet? The Tohono Chul Park expects theirs to put on its usual superb display mid June. Call the Park on 575-8468 for more info.

Ed.

TCSS Silent Auction

Everyone be sure to start grooming your plants NOW for the Silent Auction on September 14. We would like to see the auction plants, clean and well-established, and staged in nice pots. Last year we had such beautiful plants at the October event, and I know we can do it again!

If you would like to volunteer to help with the auction, please call me at Arid Lands, 883-9404. *Julie*

Do you have a pink slip?

If you find a *pink slip* with this newsletter, it indicates that, according to our records, your TCSS dues are overdue.

People's activities change from time to time, so we don't want to keep sending you newsletters if you have lost interest in our wonderful hobby. Please fill in the *pink slip* and return it to us, so that we may keep our membership records up-to-date. Thank you so much.



Agaves, Yuccas & Dasylirions of Mexico -

a report on the talk given by Greg Starr on May 1 at the TCSS meeting

Greg Starr started by telling us about the Agave plants he had brought along. Later he showed slides of Agaves, Yuccas and Dasylirions, mainly of Mexico, describing each species and fielding questions from the floor relating to the plant slide being displayed.

The first plant Greg showed us was **Agave titanota**. Greg then referred to Dr Howard Scott

Gentry's monograph "Agaves of Continental North America", as being the "bible" on Agaves.

Agave bovicornuta from Alamos is fine getting a good dose of sun, but prefers partial shade in the middle of the day.

Agave geminiflora prefers the north side of a house and is happy in full shade during the winter;

Agave ocahui - do not pamper - no fertilizer, and water sparingly. Near a performance car center by Grant and Oracle in Tucson, there are three or four *A. ocahui*'s which have grown out of character.

Agave bracteosa, being very user-friendly, is not fierce at all. It grows on near vertical cliff faces in Nuevo Leon and has been referred to as the "Squid Agave"!

Greg showed a nice little specimen of **Agave potatorum** which drew oohs and ahs from the members.

He had brought along two forms of the "Queen Victoria" Agave. **Agave victoriae-reginae**, one with a tight leaf formation, and the other, a looser leaved form.

Agave lechuguilla x scabra hybrid displayed the dark tips of its light green leaves.

Agave filifera x compacta hybrid offsets sparingly.

Agave leopoldii hybrid is possibly a cross between *Agave schidigera* and *Agave filifera*.

Greg showed us the first slide of **Agave bovicornuta**, the cow's horn agave. Along the leaf edge, one spine goes towards the center of the plant, and the next spine towards the outside, giving the appearance of cow's horns. It has yellow flowers.

Greg then explained the different types of agave inflorescence. Some have a single spike with individual flowers along the flower stalk, while others are panicle type with side branches off the main flower stem, each branch bearing flowers.

Agave bracteosa has spiky type yellow flowers and the slide showed a 5 ft diameter clump. Greg related a story about Warren Jones who, in 1978, climbed up a vertical rock face to collect what he thought was a red-flowered Aloe. He got the plant which turned out to be *Agave bracteosa*. Greg is anxiously waiting to see the blooms on his plant of this species, to see if they really are red.

Agave colorata is a coastal plant near Guaymas and is found in two forms, one with long narrow leaves and the other with leaves which are broad at the middle, but taper at both tip and trunk. The broad type will offset. It has panicle flower stems of pale yellow flowers, which are produced when plant reaches between twelve and twenty years of age. Greg said he had seen one which had flowered in only four years, but it had been grown very fast.

Agave geminiflora is hardy in Phoenix, but its hardiness is suspect here in Tucson. Prefers shade. There is one on Rosemont between 5th and Broadway, which is in full open exposure

and shows no damage. If grown in full sun the plant rosette is more dense.

Agave maximiliana var. katherinae from Durango/Sinaloa has not yet been tested here. In habitat it grows amongst pine trees in an area which gets snow. The slide showed a 4 ft across, 4 ft tall rich green plant.

Agave neomexicana from north of the border, in the Guadalupe Mountains, NM, grows in full sun, is totally hardy, and has dense rosettes.

Agave ocahui was shown growing in a crevice in rock with very little dirt to grow in, in full sun and getting the reflected sun off the rock in Sonora. It has a spiky, yellow flower. The plant shown growing at Huntingdon is a non-offsetting type. Even used in a container, it retains its good form.

Agave parryi var parryi was grown from seed collected in Chihuahua. There are several varieties of *parryi*; *var huachucensis*, *var truncata* from Durango and Zacatecas.

(Continued on page 6)



(Continued from page 5)

Further south they grow more dwarf with broader, shorter leaves. Flowers are panicle.

Agave pedunculifera from Sinaloa is similar to "octopus" agave, with soft leaves and terminal spine. No spines along edge of leaves. Probably doesn't freeze in habitat, so would be OK in California, but not here. Spiky flower.

Agave potatorum, heavily armed with spines and terminal spine. Fairly tropical and common along some roadsides and very decorative.

Agave scabra from Chihuahua, when crossed with *A. victoriae-reginae*, makes a decorative plant which does extremely well here, without producing too many off-sets.

Agave schidigera with spiky, light-purplish flowers, grows in full sun, with pines nearby at high altitude in the State of Durango. Those which grow in San Luis Potosi are not so symmetrical.

Agave striata from Zacatecas in mid-Mexico also has spiky, purplish, though more reddish than *A. schidigera* flowers.

Rabbits love **Agave victoriae-reginae**. A discussion then followed on what rabbits like: rabbits, it was agreed, like some plants in one area, and in another place, they won't even touch those same plants. *A. fernandi-regis* is similar, but more open, than *A. victoriae-reginae*.

Two slides of hybrids came next - *A. scabra* x *A. fernandi-regis*, with its dark tipped leaves, and *A. lechuguilla* x *A. scabra*.

Beaucarnea gracilis from Tehuacan with its swollen trunk is not likely to be hardy here.

Dasyliirion gentryi from seed collected in Southern Sonora makes a beautiful form here in full sun. Variations in leaf color - blue or green.

Dasyliirion leiophyllum from Western Texas is low to ground although some develop trunks as they get older. Spiky flowers.

Dasyliirion longissimum is a taller plant than *D. leiophyllum*, with a trunk up to 6 ft. No teeth on leaf margins, smooth leaf, unlike all other *Dasyliirions*. When rolled in hand you can feel the 4 sides of the leaves. A specimen with a 4-5 ft trunk may be 200 years old. Very slow growing. In cultivation it grows much more quickly with the extra water and fertilizer it gets.

Dasyliirion miquihuanensis grows faster than *D. longissimum*, and has no problem with full sun.

In 1986, Greg made a trip to Mexico with Ron. They saw spikes of *D. longissimum* on distant hills. They had

cut two stalks down when Ron said to Greg, "You take these two back to the truck and I'll go further up the hill, then I'll meet you back at the truck." A while later, Greg saw Ron walking back to him with one spike on each shoulder, unknowingly knocking these spikes on other tall plants as he walked. Seeds flew off the spikes. Greg saw \$\$\$ flying off the spikes! Even so, they still got between 30 and 40,000 seed off those two spikes.

Dasyliirion wheeleri grows north and south of the border with *Yucca rigida*.

Nolina longifolia from Oaxaca starts with single trunk, eventually splitting into two trunks, or even three. Very attractive plant - old leaves hang on and droop over trunk, so that at all times it has leaves which are erect, spreading, and drooping.

None of the **Nolina matapensis** in Central Sonora, not far south of the border, had flowers when Greg photographed them.

Ron and Greg found **Nolina nelsonii** which had developed a 10 ft trunk with a massive seed spike. Ron, at 6ft2" thought that Greg should climb on his shoulders and cut off the spike. When this was done, Ron emerged with bees all over his face which had been buried in the dead, drooping leaves, while Greg was cutting the stem.

Yucca faxoniana from Guadalupe Mountains in NM has a stout trunk and can be found sporadically in nurseries.

Yucca rigida from Coahuila, has a tight rosette of stout, bluish leaves, with sharp terminal spines. "Don't plant in high traffic area, unless you want to keep people away!" In TBG this plant is in bloom in late March/April.

The variable species, **Yucca decipiens** from Nuevo Leon and S. Coahuila and near Monterrey, has flower spikes which hang down here, but when growing in Australia, the spikes stand up.

Bobette Levy asked about Agaves dying after flowering: the clumping types will continue to grow, with just the flowering rosette dying, but the solitary types, bloom and die.

Further reading:

Las Plantas Mexicanas del Genero Yucca, by E. Matuda, is a monograph on Mexican Yuccas (in Spanish) 1980

Yuccas of South Western United States, by Susan Delano McKelvey. 2 vol. 1938





TCSS Program

Meetings are at 7 P.M. at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson 85712, unless stated otherwise.

Non-members Welcome!

Thursday June 5 Carl Olson, Associate Curator of the University of Arizona Insect Research Collection, will present the program, **Insect And Other Arthropod Interactions With Your Cacti And Succulents**, at the TCSS meeting on Thursday, June 5. This slide presentation will provide a look at insects commonly encountered in your yard, with a different look at what most insects and other arthropods really do **for** you, not **to** you.

Carl has been at the UofA for 22 years. During that time he has taught a beginning course in entomology each Fall; taught many Elderhostel groups; held workshops for many public school and docent groups in the Tucson area; served on the faculty of the Tucson Audubon Desert Ecology Institute; and has been guest lecturer for courses in horticulture, Natural History of the Southwest, agricultural education and many workshops in teacher education. He is currently involved in an outreach program with Pima Community College called "The Jewels of the Night" which helps introduce many to the extraordinary activities of insects at night.

Participation in a variety of research activities has also been a part of his work. Exploring fossil insects with Van Devender and W. Eugene Snodgrass at the Desert Museum has led to several papers. Curatorial work with Rene L. Snodgrass has resulted in articles for their publication "Sonoran Insects: A Research Associate approaches other areas of research work and both forensic and urban landscape entomology."

Carl has also been involved with informing the public about insects and how to deal with various encounters in the home and yard. He has been on the KUAT series "The Desert Speaks" and "Arizona Illustrated". In 1984, Carl co-authored the book "Learning about and living with insects of the Southwest" with the late Floyd G. Werner.

Refreshments - those with names E - N please.

Thursday Aug 7 Speaker - *Jon Weeks*
"Brief botanical tour of arid land plants of Nuevo Leon and Coahuila" Refreshments O - Z

(continued foot of next column)

Other events to interest you

Some of these events are quite a long way away from Tucson but, as some of you travel the country and beyond, it is nice if you know what is going on elsewhere. It is recommended that you check dates and venues before travelling a long distance.

July 1-5 Pre CSSA Convention Baja Tour, "Boojums & Boulders". Call Baja Discovery, (800) 829-2252

July 5-6 CSSA Show and Sale, Huntington Botanical Garden, San Marino CA. Info: Duke Benadom (805) 526-8620

July 7-12 CSSA Convention, San Diego. *Hurry and make your reservation today* - see page 1 of this issue for details.

July 12-18 Post CSSA Convention Tour, "Transpenninsular Trek", 700 miles. Call Baja Discovery, (800) 829-2252

August 16/17 Inter-City Show and Sale, Arboretum of Los Angeles County, 301 N. Baldwin Av., Arcadia, CA. Info, (310) 599-1146

1998

Aug 31 - Sept 4 - 25th Congress of the International Organization for Succulent Plant Study, Kirstenbosch, South Africa. This is being organized by Dr Gideon Smith and Mr Craig Hilton-Taylor of the National Botanical Institute, in collaboration with the Succulent Society of South Africa. Info: Dr Gideon F. Smith, Director: Research, National Botanical Institute, Private Bag X101, Pretoria 0001, South Africa.



Sunday Sept 14 Silent Auction, chaired by Julie Turko. Afternoon. *Please* call Julie on 883-9404 with your offers of help for this event. See p.4 also.

Thursday Oct 2

Speaker - *Kent Newland*

"The Genus Mammillaria"

November to be advised

December Christmas Party

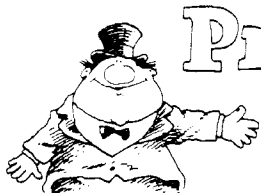
In the Fall of '98

T.C.S.S. 2nd Stuck-on-Tucson



NEXT MEETING

Thursday, June 5 at 7 P.M. in the Porter Room at the
Tucson Botanical Gardens
2150 N. Alvernon Way, Tucson, AZ 85712



Presenting

Carl Olson,
Entomologist from UofA

“Insect Interactions With Your Cacti and Succulents”

(Please see previous page for more details of this super event)

Refreshments by those with family names beginning with E to N

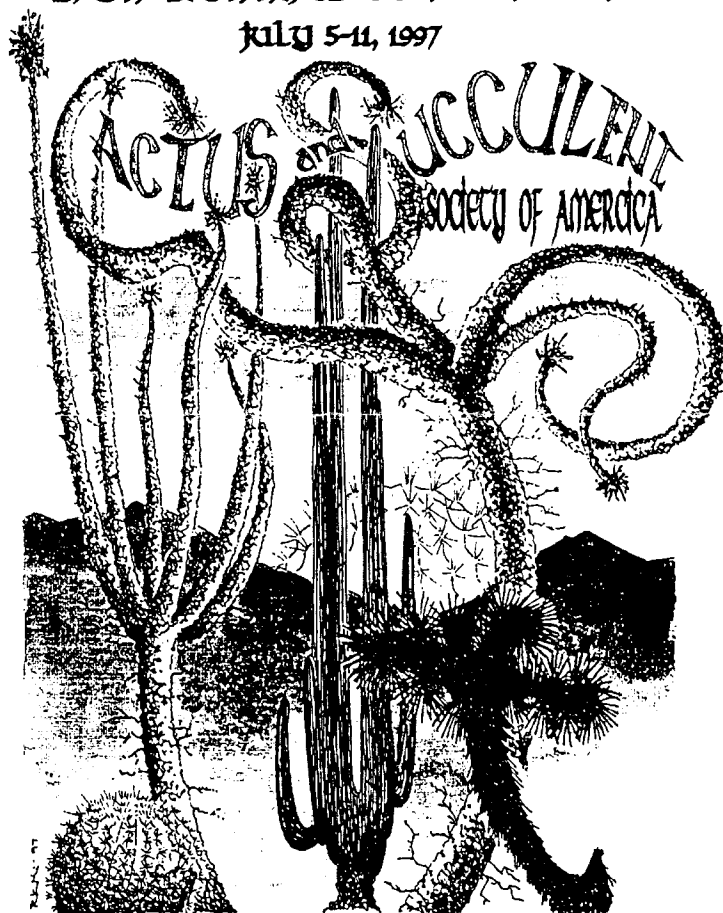
Desert Breeze

Volume 2, Issue 3

August 1997

Boojum Sky-Writing

27th Biennial Convention
July 5-11, 1997



hosted by THE SAN DIEGO
CACTUS & SUCCULENT SOCIETY

This lovely drawing of "Boojum Sky-Writing" is the winner of the San Diego Cactus & Succulent Society's Art Contest for a color poster to celebrate the CSSA Convention held in San Diego from 5 to 12 July 1997.

The artist, Richard K. McNeill, resides in Garland, Texas, and is brother to San Diego C&SS member Pamela Badger. In college, Richard majored in Fine Arts. However, present fiscal responsibilities have caused him to take a day job in another far more mundane field. Richard has never been to Baja to see the Boojum in all its glory, so produced this poster from photos and drawings gathered by Pamela Badger and sent to him, together with a flyer about SDC&SS art contest. Well done, Richard!

Note: If anyone would like a copy of this poster in full color, you could try contacting the SDC&SS at P.O. Box 33181, San Diego, CA 92163-3181, to see if they still have a few left over from the Convention.

The drawing and notes on the artist were taken from the July issue of the San Diego Cactus & Succulent Society's newsletter, **ESPINAS Y FLORES**.



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Recent Publications from Strawberry Press.....	page 8
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Tucson Cactus & Succulent Society
Founded 1960

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NEWSLETTER EDITOR:

Carol Clapp 908-9001

e-mail: kitfox@azstarnet.com



Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society
**Copy deadline is 20th of month
preceding month of issue**

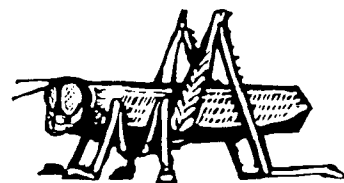
Please send your articles, contributions,
suggestions, or announcements
you would like to make, to the Editor,
Carol Clapp
P.O. Box 91560
Tucson AZ 85752-1560

New TCSS Membership Roster

It is expected to have the new membership roster available at our next meeting, August 7. Please pick up your copy if you want one. From time to time, when there are lots of new members, changes of addresses, members getting on line with e-mail, etc. we will issue an addendum.

Thanks to Carl Olson

Thanks to Carl for checking my report of his talk to us at our June meeting. See pages 4 and 5. Did you see Carl speak on TV on Wednesday 16 July, about the local grasshopper invasion? He thinks it is the result of conditions being ideal for their breeding earlier this year that there are so many about now.



Late News —

Straight from the Internet

The Second Southeastern Cactus & Succulent Conference will take place on February 27,28, March 1 & 2, 1998. The first conference in 1996 was a winner and the second promises to leave the first one in the dust!

Details from e-mail: <Emyemy@aol.com> or write: South Florida Cactus & Succulent Society, Inc., PO Box 161407, Miami, FL 33116

TCSS Dues

of \$15.00 (\$20.00 per family)
should be sent to
TCSS Treasurer, Arnold White,
4755 N. Camino Gacela,
Tucson, AZ 85718

Dues run from Jan - Dec, but if
joining late in the year, you get the
next year added in.



IOS



**25th CONGRESS
OF THE
INTERNATIONAL
ORGANIZATION
FOR SUCCULENT
PLANT STUDY**

**Kirstenbosch
South Africa**



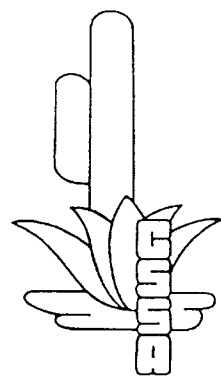
**31 August to 4 September
1998**

If you would like more details of this exciting event, please contact:

Dr Gideon F. Smith, Director: Research
National Botanical Institute
Private Bag X101
Pretoria 0001, South Africa

**Cactus & Succulent
Society of America
Inc.**

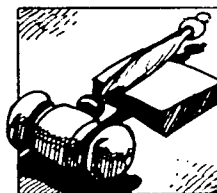
The next issue will be **extra special**. Due to be mailed about August 1 to present members of the CSSA, the July-August issue is devoted largely to *Mammillaria*. Well-known experts will present articles on *Mammillaria tezontle*, *M. sartorii*, and *M. eriacantha*, and a **new species will be published**. Popular-type articles will also be furnished by John Pilbeam ("The Odder Mammillarias") and Bill Maddams ("Twenty deserving Mammillarias").
Be one of the first to get the Journal - Join Now!



Membership, including Journal, for USA is \$35. Associate (spouse) membership is \$10. Membership is on a yearly basis (Jan-Dec). If you join now, you will get back issues of the CSSA Journal to January of this year. Send fees in US\$ or Visa/MC (no cash) to:
CSSA, Inc., c/o Mindy Fusaro
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TCSS Board Meetings

August 28, 1997
October 23, 1997



Time and Place:

7 P.M. College of Pharmacy
Check front door for room location

At the TCSS Board Meeting on June 19, 1997, the following motion was passed:

"Be it resolved that the Board of Directors declares duplicate volumes in the Library to be surplus for sale to the benefit of the Club."

Dick Wiedhopf
President, TCSS

A report on Carl Olson's talk to the TCSS on 5 June 1997 — Insect Interactions with your Cacti and Succulents



People usually want to get rid of insects, maybe by killing them, but that's not always necessary. Carl tries to make people understand that all insects are not bad. Learn how to grow your plants so they are healthy, then most of the bugs will go away. Bugs and plants co-evolved. Nature has little flaws in bugs and plants - every one can't be perfect. We need to change our attitudes [about insects]. There are few insects which damage cacti on the outside. People need to get away from the paranoia over insects and spiders which the media often generates. A slide of 'that stinky old fly trapping flower', a stapelia, was shown.

"What good are flies? If we didn't have flies, some of our plants wouldn't get pollinated."

Carl talked about saguaros —

"Who pollinates these cacti? Not only bats, but some insects too."

There is a neat little beetle which gets under the callouses created by Gila woodpeckers on the stems and branches of saguaros. In fact, the Gila woodpeckers create the most havoc of all creatures to saguaros by making those big holes. Some termites come up from the ground in the fall and clean up the barked parts at the base of saguaros which, effectively, recycles the woody growth. The saguaros are great sentinels while living, and are great in death too by providing habitats for many insects. Some beetles are real artists, working under callouses and "doing their artistry", and chewing out little grooves. People rave over these pieces of chewed wood and buy them [from boutiques].

"You may have noticed in the flowers of cacti how the stamens appear to be moving, even when there is no wind."

This is caused by a little sap beetle which crawls around deep down amongst the stamens. The larvae of this beetle pupate in the ground. Beetles can be found in flowers of all cacti, and they also like to feed in the fruits. They don't hurt the seeds.

Honey bees do some pollinating of the saguaros. It is hoped some new research and changes in comb-size will help get rid of the varroa mite which has killed off so many [European] honey bees. Africanized honeybees are probably here to stay, so we need to be aware and prevent hive-making near homes.

"The termites are recyclers, breaking down cellulose material which



doesn't get done otherwise. If it weren't for them, and the ants, we'd be getting caliche instead of soil. And you all know what that would be like."

Termites are almost albino-like, and the mud tubes they make out of soil, saliva and feces, protect them from the uv light of the sun. When the ground becomes super-saturated, the termites escape the moisture in the ground by making mud tubes after the rains.

Pack rats nest among the opuntias. Where there are pack rats, there will be kissing bugs, *Triatoma rubida*. The best defense is to keep your [dwelling] house off limits with tight-fitting doors and screens.

"Kissing bugs feed on exposed skin at night. Your face is exposed skin, so they like to feed around your lips. Their mouth bits are so fine that they can get them between your skin cells, and you don't even feel it."

The nymphs of cholla bugs have beaks which can pierce the skin of opuntias and leave white spots on the pads.



"Now, this doesn't hurt the opuntias, but you can hose the bugs off the plants if you wish."



If you don't like the looks of pads with white spots, cut off the pad, plant it so you get a separate new plant. Maybe you'll even get four new pads on the mother plant."

If you have many Cactus Longhorn beetles, *Moneilema gigas*, you may want to cut down their population if you want to keep your cacti. These beetles have smooth, hard shells, and are totally oblivious to spines.

Carl proceeded to tell us about 'spit-wads'. These waxy wads look like white fluffy bits of wool on the pads of opuntias (and other cacti). In this wax, are small cochineal scale insects, from which a neat red dye used to be a primary source of Mexico's economy many years ago. There is a moth predator caterpillar which eats this scale insect inside the white 'spit-wads'.

"If you don't like the 'spit-wads', wash 'em off."

Leaf cutter bees 'redesign' your plants a bit. They cut out pieces of leaves, or flower petals or stalks, and wrap these pieces around pollen and nectar they have collected by drumming their abdomens on stamens to pick up the pollen. Leaf cutter bees are another pollinator

for our cacti.

Digger bees make holes and nests in the ground. If you find mealy bugs on your plants, clean them off with Q tips. Mealy bugs will dig into the soil and feed on the roots, so one must deal with the whole population.

The Agave weevil, *Scyphophorus acupunctatus*, attacks only those landscape agaves growing where there is something wrong with the soil or some other stress. It is only the unhealthy plants which get attacked. In a group of four plants, it may be that only one is affected. Larvae and adult beetles can be in the same plant. A culling procedure is necessary for these unhealthy specimens. The whole plant, including the crown, needs to be removed, and the area cleaned.

The grubs of scarab beetles are organic feeders, and some turn into June bugs (*Diplotaxis spp.* and *Phyllophaga spp.*). They are attracted to lights. To get rid of them, put down some pans of water with detergent added, near the light source. The June bugs will land on the water, sink, and drown. The related Fig beetles, *Cotinus mutabilis*, are usually out in July. If there is a compost pit nearby they will be living there. They like to feed on opuntia fruits and will eat your figs. Carl had seen a Fig beetle only the week before this talk, out early this year.

Cicadas (*Family Cicadidae*) live in the soil and help aerate it. They do no damage after the nymphs emerge from the ground, although "the adults may prune trees a bit" when they climb on to twigs to lay their eggs.

"The cicada guys sometimes sing to attract more males to make a louder song, which then impresses the females."

The Green Lacewing is an excellent predator and we should be happy to have them around. They lay their eggs on silken threads hanging from twigs and spines, which makes it hard for other insects to get at their eggs.

"Learn about the fauna, and learn all the stages. You'll learn about the balance of nature, too."



Ant lions (doddlebugs) which make holes in the ground are also good predators. They look like damsel flies, but are dull. They, too, are attracted by our porch light.

We have over thirty species of scorpions in Arizona. There are three common ones, the stripe-tailed scorpion (*Vaejovis spinigeris*), which has robust tail segments. Its sting is minor. They give birth to their young and then carry them around on their backs.

"How can anyone dislike mothers who take such care of their young?"



They are good predators and feed a lot on chirping crickets. Another of the scorpions common here is the Bark scorpion (*Centruroides exilicauda*) which has a potent sting. It has weak 'arms' but has a strong tail, and can kill cockroaches and crickets.

"Spiders eat insects, not people; but occasionally one may have a bad hair day!"

We don't have the brown recluse spider in Tucson, but a related species, *Loxosceles arizonica*. The cellar spider, or daddy longlegs spider, in the spider family, *Pholcidae*, is here. Black Widow spiders (*Latrodectus hesperus*) are cissies! She will try and get away from us when we get near her, but she will defend her egg cases, so caution is needed at breeding time. Black Widows clean up crickets.

"And they don't come and bite us at night - we're **monsters** to them."

"Don't spray it!" said Carl.

"If you really must kill it, take two bricks.... or bite their heads off."

The final slide of one of our fantastic sunsets was preceded by a Pinecate beetle bowing out.



Carl answered many questions - the audience had shown lots of interest in his talk.

Termites mold their tube-like covers out of their saliva, soil, fecal material, so that they can work with protection from the sun. The bug-spit from the termites makes a tremendously hard material. In South Africa they use that material to make tennis courts.

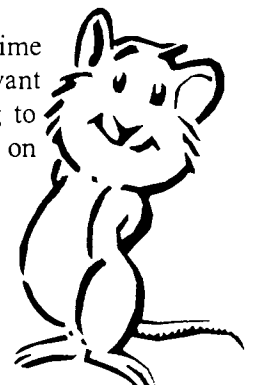
"Bee spit and regurgitation, we eat"

Tarantulas have flat holes, spinning a web as a door to prevent insects from sharing their holes.

Harvester ants are the nastiest stingers here. If you find a circle of plants which are doing particularly well - it may be that some ants have been working the soil within the circle causing more moisture to be there. We have leaf cutter ants, and honey pot ants, and they are all beneficial as they aerate soil deeply.



Carl Olson concluded question time by inviting members who want bugs identified to take the bugs along to his office #410 in the Forbes Building on UofA Campus.





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For membership information write:

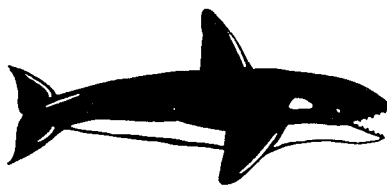
*Friends of
Saguaro
National Park*

**P.O. Box 18998
Tucson, AZ
85731-9998**



Welcome to our New Members

Constance and Charles Bachman	297-9866
7480 N. Calle Sin Desengano, Tucson AZ 85718	
Lois Ladwig	298-7358
294 N. Fenceline Drive, Tucson AZ 85748-3726	
Ms E. Ann Martinez	327-3287
1220 N. Swan Rd., Tucson AZ 85712	
Jack E. Ramsey	888-6137
3115 N. Fairview Ave. #35, Tucson AZ 85705	
Rein Vanderpot	744-0210
3906 W. Ina Rd. #200-336, Tucson AZ 85741	



**San Diego, the City of Sea World,
and the last CSSA Convention....**

As usual with the CSSA Conventions, the best thing at San Diego was the chance to meet so many of one's old friends, and to catch up with their news. The next best thing was the excellent program of talks given by experts in their own fields. I particularly enjoyed the humor of Graham Williamson and his Trials and Tribulations; the meticulousity of Ted Anderson's research methods on endangered Mexican cacti; the intrepid plant hunting of Sheila Collenette; and the fine close-up photography by Jerry Barad. The photo of the insect with its twisted proboscis, stuck in a stapelia flower, was outstanding. I missed only a few talks when I forgot the time while browsing in the book and plant sales. The plant offerings were excellent, and the adjacent book sales had some wonderful books for sale. Mary Odette Books had lots of exciting botanicals on offer, many of them used but rare, whereas the other book seller, Rainbow Gardens, had mainly new books, with just a few used specialist items. As usual at these convention sales, I filled a few gaps in my library.

And I particularly enjoyed the brief scramble on the Baja mountain side taking photographs of the plants growing there - *Bergerocactus emoryi*, *Echinocereus maritimus*, *Mammillarias*, *Ferocactus* sp., *Dudleyas*, *Euphorbia misera*, *Agave shawii*, and my personal pièce de résistance, *Machairocereus gummosus*. I'd been up and back down the mountain side, taken lots of photos, when I spotted the *Machairocereus* from the pathway below. I just shot back up to get some photos of it.

The hotel complex of 34 acres was huge for our group of ~400, and there was a lot of walking to be done and it was hard to find people. I sure didn't miss my treadmill. But I did miss those impromptu chats in less big venues, when you accidentally bump into other cactus nuts in the hall ways between rooms, and which often lead to exciting exchanges of information. The next Convention will be in Las Vegas and we have been promised that all the facilities we need will be very close together. Las Vegas, the city of fun, should be good for the whole family — and you don't have to travel far out of town to be amongst cacti in their habitats.

We're already looking forward to it!

Coming events



TCSS Program

Meetings are at 7 P.M. at the Tucson Botanical Gardens,
2150 N. Alvernon Way, Tucson 85712
unless stated otherwise. **Non-members Welcome!**

Thursday Aug 7 Speaker - *Jon Weeks*
"Brief botanical tour of arid land plants of Nuevo
Leon and Coahuila" Refreshments O - Z

Sunday Sept 14 Silent Auction, chaired by
Julie Turko. Auction starts at 2 p.m. at Tucson
Botanical Gardens. We expect to have plants in a
good range of values, from some very inexpensive
ones to show ready specimens. Make sure the ones
you bring along are decently potted and clean.
Call Julie on 578-1666 with your offers of help for
this event. We have the rooms booked from 12
noon to 5 p.m. to allow sufficient time to get the
auction plants set up. Please come along early and
help get everything ready.

Thursday Oct 2 Speaker - *Kent Newland*
"The Genus *Mammillaria*". Kent Newland is the
botanist for the City of Phoenix Water Conserva-
tion Office.

Thursday November 6 to be advised

Sunday December 14 Christmas Party
12 noon to 5 p.m.

In the Fall of '98 T.C.S.S. 2nd
Stuck-on-Tucson

CSSA Conventions

1999 — Las Vegas

2001 — Albuquerque

Other events to interest you

It is suggested that you check dates and venues before travelling
a long distance for any of these events.

August 16/17 Inter-City Show and Sale, Arboretum
of Los Angeles County, 301 N. Baldwin Av., Arcadia,
CA. Info, (310) 599-1146

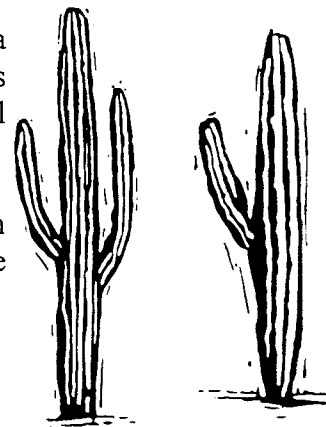
September 26-28 IOS Convention at Huntington.

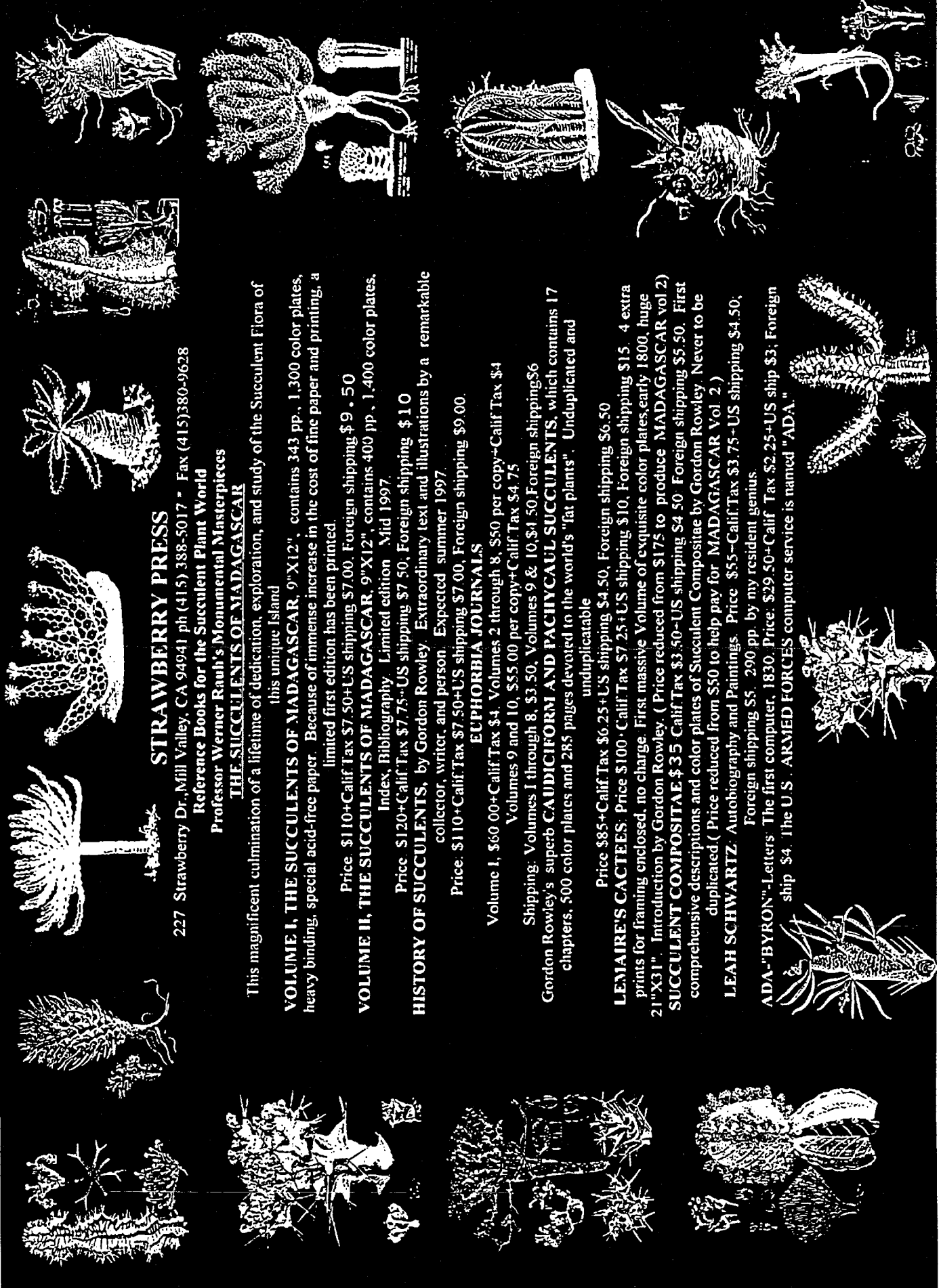
November 1 and 2 - Southern Arizona Orchid
Society Show at El Con Mall, Tucson.
Theme "Golden Harvest"

November 15 and 16 - Gardeners of Tucson (Men's
Garden Club) Show at Park Mall, Tucson

1998

May 12 - 14 — Arizona
Federation of Garden Club's
State Convention at Hotel
Park, Tucson.
Theme - "Sahuaro Swing"
Garden Club members from
all over Arizona will be
there.





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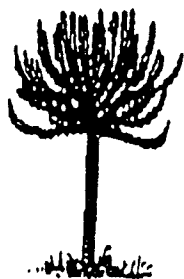
ADA-"BYRON"-Letters. The first computer, 1830. Price: \$29.50+Calif Tax \$2.25+US ship \$3; Foreign ship \$4. The U.S. ARMED FORCES computer service is named "ADA."



A History Of Succulent Plants by Gordon Rowley

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Forty years in preparation — five years in the press — **GORDON ROWLEY's** *magnum opus* covers the record of succulent plants from cave paintings and scrolls to laser printing and databases; from herb lore to selective breeding and environmentalism; from Theophrastus to Linnaeus, Darwin and the modern sages; from the first Melocactus mistaken for a fruit to the thousands in cultivation today.

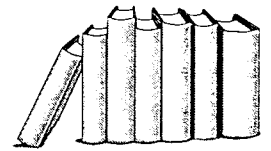
It is the story of lone explorers, patient gardeners, museum botanists, amateur experimenters, clubs, societies and major research projects - a biofile of nearly 400 names never before attempted.

Sumptuously illustrated in the style of "Caudiciform & Pachycaul Succulents" and other Strawberry Press offerings, this beauty is scheduled to appear before the end of 1997.

Flyers are expected to be available at our next meeting to make reserving your copy very easy at a specially discounted price available only to those who pay before November 1, 1997.



A review
by
Bookworm Bill



Copiapoa In Their Environment

Rudolf Schulz and Attila Kapitany

Published 1996 in Australia by Southbank Book. Price approximately US\$85.00.

Limited edition of 2000.

250 superb full color photographs taken in the Atacama Desert of Northern Chile are enough to make cactophiles want to make Chile their next trip. To illustrate the excitement which this thoroughly researched book produces in me, I quote the opening paragraph —

"The Atacama Desert is on the edge. It is on the edge of the continent and on the edge of the Andes Mountains. Life here too is also on the edge. It is on the edge of the desert in the fog zone and most importantly, on the edge of survival."

This is the sort of book you could take along on your travels and locate the plants from the GPS references given. Lots of maps, cross sections of the "edge" of the desert, with elevations, weather charts, soil analyses, even three dimensional views of the fog banks, make this a fun way to learn about the habitats of Copiapos, and the problems they have in surviving.

About the authors — *Rudolf Schulz* was born in Germany, educated in the USA and has spent most of his life in Australia. He has a very ambitious aim in life - to visit all of the world's succulent habitats. *Attila Kapitany* was born in Melbourne, Australia, and has spent all of his life there, other than during his extensive travels to cacti habitats. His aim is to help conservation by distributing artificially propagated endangered plants. Noel Butler has produced the fine artwork and diagrams for this book. So....pull up a chair, put up your feet, immerse yourself in the desert fog and enjoy this unique book.

Note from the Ed: Contact your bookseller about this book and ask when it will be available, or e-mail the authors at copiapoa@iaccess.com.au

NEXT MEETING

Thursday, August 7, at 7 P.M. in the Porter Room at the
Tucson Botanical Gardens
2150 N. Alvernon Way, Tucson, AZ 85712



Jon Weeks

Owner of Landscape Cacti

**"A Brief Botanical Tour
of Arid Land Plants
of the Mexican States
of Nuevo Leon and Coahuila"**

Refreshments please by members with last names **O thru **Z****

Desert Breeze

Volume 2, Issue 4
September 1997

From the
Arizona Daily Star
August 7, 1997:

"A Tucson-area couple faces more than \$40,000 in civil fines for the alleged attempted theft of seven saguaro cacti and an ocotillo plant from state trust land near Marana...."

See more on page 7

President's Message

It's SILENT AUCTION time again! I remember the first one I attended. The Society held its meetings at the Randolph Park Recreation Building on the second Sunday of the month at 2 p.m. I had never been to an event like this. It was great. There was table after table lined on both sides with an incredible assortment of cacti and succulents. This was the chance of a lifetime to acquire new plants. It is hard to believe that it was 1970 and there were only a few growers in Tucson. I remember Hugo C. Johnson's Cactusland Nursery and Gerlach's Nursery but I can't remember any others. (If you know some of the others of that time, drop me a line.) Alan Blackburn, Carl Horst, Hildegard Naese, Nancy Clarke, Mary Church and several other members would bring extraordinary plants to bid on. Every plant was exciting and new to me. What a great feeling.

The bidding was furious, 10 cent raises were thrown around like we were all related to the Rockefellers. Some plants were going for 2

(Continued on page 2)

Plant Auction Sunday Sept 14, 2 p.m. Tucson Botanical Gardens

Call Julie Turko on (520) 883-9404 between 8 a.m. and 4:30 p.m. Monday to Friday if you would like to help. Julie has a list of areas in which assistance is still needed.

Read more about this exciting event on page 3 inside.



**A Second Meeting
for September too
- on Sept 21.
See pages 5 and 6**

We're on the World Wide Web
Check This Out!
[http://
www.desertcactus.com/tcss/](http://www.desertcactus.com/tcss/)

(More details on page 9)



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Tucson Cactus & Succulent Society
Founded 1960

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Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society

Please send your copy by the 20th of the
month preceding the next month's issue,
to the Editor,
Carol Clapp
P.O. Box 91560
Tucson
AZ 85752-1560

(Continued from page 1)

to 3 dollars. WOW! I just kept bidding, hoping the signal to stop all bidding would happen soon. I could collect all those special plants for which I was the high bidder. Then it happened, the buzzer sounded. I won!! At least some of the plants I bid on.

Times have changed. Now there are a dozen or more great nurseries in Tucson. Many of the plants that will be available weren't even discovered in 1970. The prices will certainly be higher but that feeling will be there. That wonderful feeling of acquiring a new plant; a special plant, the plant I always wanted.

I CAN'T WAIT.
SEE YOU THERE.

Dick Wiedhopf
TCSS President



**Welcome
New Members**

Art Pacheco 744-6240
4442 W. Plantation St., Tucson AZ 85741
Mike Ellis
6581 N. Paseo de Gabriel, Tucson AZ 85741

Please **add** the above new members to your roster (if you haven't gotten one yet, please ask Maury Clapp for one at the next meeting you attend).

While you have your roster in hand, please make the following alterations:

- Delete** Angelo LaScala's address in White Bear Lake, MN, as he is now living here all year.
- Add** Arnold White's new e-mail address - aawhite@aztec.asu.edu
- Change** Telephone number for Eugene C. Loring and Hal E. Myers should read 625-8109

Silent Auction

Sunday, September 14, 2:00-3:30pm
Tucson Botanical Gardens,
2150 N. Alvernon Way, Tucson.

To All Club Members: It is that time of year again, time to prepare for our annual fund-raiser, the Silent Auction. Last year we raised over \$1000, and we aim to do it again.

The Event: The Auction this year is going to be run a little bit differently. We will have bidding in three stages: three separate areas will have bids closing at different times (e.g., 2:30, 2:50, and 3:10pm.). These areas will be marked clearly as you come in. We will also have refreshments available, and room to sit and gab about soil.

The Plants: Hopefully by now you have given thought and special care to plants you would like to donate. How else will you make room for those you bid on?? In any case, we request that auction items be well-established in nice clean pots, nicely groomed, free of debris, etc. Although we always love large specimen plants, please give thought as well to donating miniature collections, like a set of 4-5 Haworthias, for example.

Making Your Contribution: If you have your contributions ready ahead of time, please call Julie Turko at 883-9404 (between 8:00am and 4:30pm, M-F) and she will arrange to pick them up. There is space set aside at Arid Lands Greenhouses (3560 W. Bilby Rd.) to hold plants until auction day. You are also welcome to drop them off there between 8:00am-4:30pm, M-Sat. Or, you may bring plants and other auction items directly to TBG between 1:00-2:00pm the day of the auction. Items do not just have to be plants; we have had other generous offers of artwork and books as well. Use your imagination!

Cashiers: We will have 2-3 cashiers at the TBG entrance, so once you have won a bid, you may at any time pay for your auction item(s). We currently need volunteers to fill these positions. If you are interested, please contact Julie Turko at 883-9404 (day), or leave a message at 578-1666 (evening). Several cashiers guarantees that someone will always be there to handle the money, even if one cashier at a time wants to sneak away and place a bid.

Other Volunteers: Also needed are people with trucks to move plants, and volunteers to help set up tables, refreshments, and to help with clean-up. This should be a really fun event, and the sooner we work out the details, the better. If you can volunteer, please do, and let Julie know as soon as possible. Thanks!



BIG EVENT!

Some of the plants to be auctioned....

Some of Dan Sims' well known and popular hybrid Echinopsis, including:

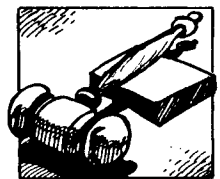
Zulu Dawn	2 plants
Cool Violet	2 plants
Pueblo Sunrise	1 plant
Brite Star	1 plant
Johnson Hybrid	1 plant
Le Rendezvous	1 plant
300 Geisanheim	1 plant
Dimmitt's OH WOW	1 plant
Dimmitt's April Dawn	1 plant
Queen of the Night	1 plant

And Julie tells us there will be a large Cyphostemma juttiae (stem is 12" tall, base is 5" in diameter, and leaves are 12-18" long).

And lots more have been gathered together, but Editor does not have a list of the others as we go to press. Anyway, we want to keep them as a surprise!

Next Board Meeting - Oct 23

Time and Place:
 7 P.M. College of Pharmacy
 Check front door for room
 location



Plants and the Pursuit of Happiness by Roger Brown

Pursuit of happiness works only for those who realize that happiness is in the pursuit.

Cactus and Succulents are a passion I pursue with a vigor that nonbelievers may consider overzealous and overdone. Sceptics often make remarks that require me to defend my love of plants. Keeping plants is hard time-consuming work that we often have to justify to ourselves as well as others. Perhaps, this month's column will help you to crystalize your thoughts. We do, after all, live in our heads.

We are all born to an empty life with no intrinsic meaning, only the mean-

ing we give to it. The meaning we bring to life greatly influences what we get out of it. Plants, thoughtful people, pets, good books, and nature are the patchwork quilt that colors our lives with

meaning. They fill the empty space.

I often ponder the origins of the glue that bonds me to my hobby. Plants can be supremely beautiful at times, and their shapes are often a fine blend of art and nature. But this bond is too strong to have been formed just by plants, sun, soil, and water. I suspect it is my need to create a bit of paradise in an imperfect world. Paradise, after all, for the lucky ones can be a state of mind, and not necessarily a reward you wait for at the end of a life well lived.

Nurturing plants is hard work. It doesn't make life any easier, but it certainly makes it more fulfilling. Although, I sometimes question this fact as my knuckles turn white with worry for plant safety during each

sky wrecking storm. Plant keeping trains one to take a genuine interest in fine details, and with a little work one can develop the gift of finding other things to admire in day to day life. Happiness spontaneously appears when you have elevated this gift to a fine art. Walt Whitman writes that if you take the time to notice the world around you, YOU may discover that the ordinary is extraordinary.

The true meaning of the word paradise is elusive, and my investigation finds that it is an English adaption of the Persian pairidaeza, originally meaning "walled garden." Paradisal peace of mind exists in my walled garden. Here it exists for me in the present, and its gates can be thrown open at any moment I so choose. In my greenhouse I can empty my mind and unburden my soul. It is a humble backyard Eden where I can walk in beauty and slow the pace of my life. I call it "walking meditation" as I look at my plants one by one and bit by bit to find things that please me. This is a time when it is not the destination, but the journey that counts.

Amid such splendor life's cares melt away and my empty receptive mind can hear the whispering divas pointing out the hidden beauty of the plants. There is much one can find to admire with a paradisal peace of mind! With a little work you too can find this doorway to inner freedom and experience the neglected gift to mankind. Here you will find peace....peace beyond words for a few timeless moments. Life is empty unless one gath-

ers the truths, and things of interest about them, and makes them their own. People often tell me that they avoid keeping plants and pets because of their short life-span, and they could not bear to deal with their loss. Death comes to all living things when fullness of age arrives, and we all must experience it many times during our lives to be able to gracefully accept our own fate. Better to experience the sharpness of losing a living thing we are fond of than allow the drying up of unspent love.

I must admit I want to convert all my friends to the religion of nurturing plants, so they too can feel the magic of nature's finest touch. I usually try to open the door for them by sharing plants, cuttings, and seeds with anyone interested enough to value these fine gifts.

Roger Brown is a veterinarian specializing in small animal medicine and surgery. A cactus and succulent hobbyist for 20 years with special interest in propagation of rare species. Other hobbies include photography, goldsmithing, and writing for Omaha's newsletter.



The above article first appeared in the newsletter section of the CSSA Journal for July-August 1997.

We thank Roger Brown for giving us permission to reprint it in Desert Breeze.

*This article
inspired so many
people.....*

EXTRA MEETING

Visit to The Archie Deutschman Mammillaria Collection

Sunday, September 21, 1997

3 - 5 p.m.

2945 North Fontana, Tucson

The year 1988 started out simple enough. My wife, Jane Evans and I (actually, we weren't married until the end of the year, right after coming back from the Free trip to the Caribbean we had won for the 'Icebreak' contest), were recovering from having acquired the Ed Storms' Lithops collection in late summer of the previous year. We are still recovering from all of these things.

In May of '88 we purchased some property two blocks from our nursery location. There was no longer a house there; the city had decided the old house that was there was a hazard and had bulldozed it and left most of it spread out over the property. So we cleaned up the land and waited for it to get really hot and humid in August, before proceeding to build a house. While we were waiting to start what was probably the biggest project that

we had ever undertaken, I got a call from Archie Deutschman, wanting to know if I wanted his entire collection of several thousand Mammillarias. Of course I did, but as I picked myself up off the ground, I realized that there was no way that I could put out that kind of money at this time. He then told me that he was not interested in selling the plants, that he wanted to give them to me if I would take them all. Naturally I said yes! It should be noted that I did not know Archie. Of course, I had known of him as an avid collector of cacti, and an expert on the genus Mammillaria. Some years earlier, while I was working at the Desert Museum, I had the opportunity to visit his collection and left totally impressed and overwhelmed and had no further contact with him until that summer day in 1988.

Well, I had to set my priorities straight, so I put the work on our home on hold and proceeded to pick up ten truckloads of the most beautiful and incredible plants. I did not have a structure to house them in, so I placed them under the numerous native creosotes, acacias and mesquites that were here on the property. It was unbelievable! Mammillarias everywhere. I then built what I call my 'Mam' house and an adjacent shade area. I built benches and proceeded to get all of the plants put into their proper growing areas and none too soon. Archie had used wooden stakes for some of the plant names and termites had started to eat them. Some were eaten enough so that the names were no longer readable.

Archie was one of the world's experts on Mammillarias, not only horti-

(Continued on page 6)

Don't miss this unique opportunity

(Continued from page 5)

culturally, but taxonomically as well. He traveled and collected with numerous experts in Mexico at a time when you could go anywhere and were welcomed wherever you went. He collected and traded plant material with people like Frank Ludwig, Alan Blackburn, Barry Armstrong and Woody Minnich. This was, and still is, a world class collection of plants. I knew very little about them and their nomenclature and their distribution. But I love to take care of plants and I was willing to learn. I am still learning. This is a very large and diverse genus of plants. There are many variations within a species and most of these have been given a name at one time or another. There are some who are trying to work this out and I am glad it is them and not me. I like to have name associated with my plants, and in every case I have used the original name that Archie had put on the plant. I use three references to link these names with current names and related species. Those references are: *The Mammillaria Handbook* by Robert Craig, *A new Review of Mammillaria Names* by David Hunt and *Mammillaria, A Collectors Guide* by John Pilbeam. I still consider the Deutschman collection of Mammillaria to be intact. I have lost plants to attrition over the years; and I have propagated off the collection both to give away and to bring to the nursery. For the last nine years I have been repotting these plants into fresh soil and new pots. I have learned, over the years, some of the cultural requirements of this group of plants. Most of them require some amount of shade, although some of them do best and look beautiful if grown in full sun. This not only depends on the color of the plant and spination, but the age and size of the plant. I find that some plants, as they grow, become tolerant of more light. A good number of the species are cold tolerant to normal Tucson winters (26F), but there are many that are dam-

THE MAMMILLARIA HANDBOOK

WITH DESCRIPTIONS
ILLUSTRATIONS AND KEY TO THE SPECIES
OF THE GENUS MAMMILLARIA
OF THE CACTACEAE

By
ROBERT T. CRAIG, D.D.S.

Reprinted by:
MICRO METHODS LTD. and JOHNSON REPRINT CORPORATION
(1981)

ABBEY GARDEN PRESS PARADISE
1945

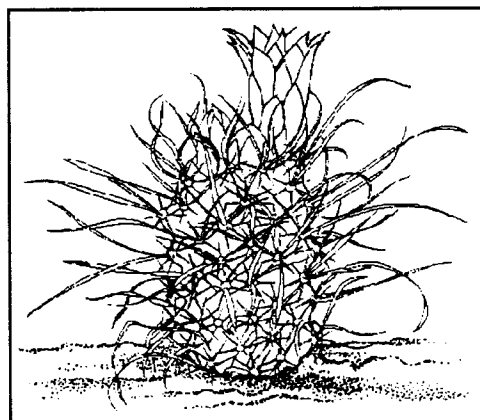
aged with frost. Most of this cultural information can be inferred by the climate in their natural habitat, but oftentimes this information is not readily available, so trial and error and sharing information is crucial to success with this and any group of plants.

My goal is to maintain this collection along with my other plants indefinitely.

Gene Joseph

Plants for the Southwest
Living Stones Nursery

(See p.10 for a map of location for our visit on Sunday September 21)



TCSS Dues

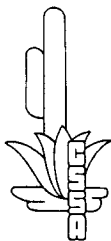
of \$15.00 (\$20.00 per family)
should be sent to

TCSS Treasurer, Arnold White,
4755 N. Camino Gacela,
Tucson, AZ 85718

New members joining at the
Auction or later in the year will
be considered paid up to end
1998

From Bob Barth, Member CSSA Board of Directors

This is the first of a series of articles that will be provided at irregular intervals to CSSA member societies for publication in their newsletters. The purpose of these articles is to publicize CSSA activities and benefits of membership in the hope of increasing the number of local society members who are also members of CSSA.



In this first article, I would like to focus on the CSSA Journal which I think is one of the major benefits of CSSA membership. While it's true that each local society receives a subscription to the journal, I'd like to ask how available those journal issues are to society members. If your club is like mine, the club librarian receives the journal which he or she may bring to a club meeting where attendees may be able to peruse it briefly. The journal, along with the rest of the library, resides at the librarian's house, relatively inaccessible to club members. Wouldn't it be better to have your own copy of the journal? Well, if you haven't looked at the journal in several years, you might say, "No, it's full of boring scientific articles featuring innumerable scanning electron micrographs of seed coats or descriptions of new taxa in Latin which nobody can read anyway even if they wanted to." What I have to tell you is that the journal has changed.

Under the leadership of the current editor, Myron Kinmach, there is much more of interest to the hobbyist grower, i.e. many more articles with a horticultural focus. The scientific articles are still there, as they should be, but there have been recent issues devoted to growing from seed, propagation from cuttings, grafting, and so forth. Other issues are being devoted to the culture of particular groups of succulents, e.g. pachypodiums, mammillarias and mesembs. The latter issue, written entirely by Steve Hammer, is perhaps the only one I've ever read cover to cover, even though I'm by no means a specialist in the group. I do have a number of representative mesembs, especially Lithops, in my collection, but they represent a relatively minor component of the collection. Nevertheless, Steve's issue was absolutely outstanding, beautifully written, entertaining, and informative. He's a superb writer. I wouldn't have missed it for the world.

Recent Journal issues have featured many more color illustrations than was true a few years ago, and this truly embraces the quality of the journal. We are determined to continue the trend towards increasing amounts of color in the journal, and the more CSSA members we have, the more Journal color illustrations we can afford. Color printing is expensive, but the larger the number of subscriptions, the more cost effective it becomes.

Have you ever ordered plants from ISI (the International Succulent Institute, now based at the Huntington Botanical Garden in San Marino, California)? Each year they offer

Possible \$40K fines....

From the Arizona Daily Star of August 7, 1997

"A Tucson-area couple faces more than \$40,000 in civil fines for the alleged attempted theft of seven saguaro cacti and an ocotillo plant from state trust land near Marana.

State officials have charged the couple with destruction of native plants, misuse of native plant tags, and theft of native plants, a State Department of Agriculture spokesman was reported as saying.

In August 1996, a state native plant officer was following tire tracks in a remote desert area when he found a saguaro cactus in the bed of a pickup and six dug-up cacti lying on their sides close by. A partially-removed ocotillo plant was also nearby. No one was near the truck when it was discovered, but the couple later returned to the vehicle and were lined to the plants' removal.

The State's six native plant officers investigate many cases of stolen or damaged native plants each year. More than 300 species of desert plants are protected by State law, and people must have a permit to possess such plants. It is also unlawful to destroy, mutilate, or remove protected plants [without a permit].

Extracted from report on the internet pages.



succulents and cacti with specific locality data (propagated from seed or cuttings), many of which are rarely available commercially; introductions of new taxa; fantastic new hybrids; and so forth. Their plant list is published annually in the March/April issue of the CSSA Journal. Maybe you've seen their lists in your club's copy of the journal, but by the time you see it, it's usually too late to order, as many of their offerings are of limited availability. If you don't want to miss out on these fantastic plants, you need your own copy of the Journal so you can send in your order right away. You will have missed out on the 1997 list by the time you read this, but there is no excuse for missing out in 1998.

For a mere \$35 a year, you can become a member of the CSSA and receive the Journal six times a year. It's a wonderful source of information about succulent plants. Ask your Affiliate Representative for a CSSA brochure and subscription form or write Mindy Fusaro, CSSA Inc., P.O.Box 35034, Des Moines, Iowa 50315-0301. A number of mail order succulent nurseries also sell CSSA memberships, and memberships may be sold at local cactus and succulent shows as we do here in Texas. Join CSSA today! You won't regret it!

Bob Barth, Member
CSSA Board of Directors

Coming events



TCSS Program for the next few months

Meetings are at 7 P.M. at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson 85712 unless stated otherwise.
Non-members Welcome!

Sunday Sept 14 2 p.m. Silent Auction, chaired by Julie Turko. Call Julie on 578-1666 with your offers of help for this event.

Thursday Oct 2 Speaker - *Kent Newland*
"The Genus *Mammillaria*", Botanist for the City of Phoenix Water Conservation Office.

Thursday November 6 Steve McLaughlin will be speaking on research into Hesperaloe plant fiber.

Sunday December 14 Christmas Party
at the Tucson Botanical Gardens.



A note from the Editor of Desert Breeze:

I often hear members saying "What about the cost of the newsletters?" or "they cost too much."

I do all the artwork and they go to the printers camera-ready.

The first three issues I've produced have cost \$94 in total for the printing. BUT....the postages for the same issues came to \$145.93, which would be the same if you had a one page newsletter printed on only one side.

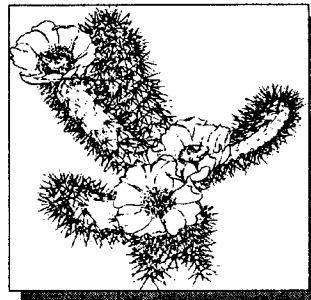
Now....if we each bring in one more new member, the same three mailings could cost about \$60 total, plus a portion of the bulk mailing fee, each mailing being of 200 pieces.

Other events to interest you

Some of the events listed may be quite a long way away from Tucson. It is suggested that you check dates and venues before travelling a long distance.

Sept 26-28 IOS Convention. The Huntington Succulent Symposium is on the Saturday. At the Huntington Botanical Garden, San Marino, CA. For more info call: (818) 405-2160

Nov 1-2 The Orchid Society of Southern Arizona is having a show at El Con Mall. The theme is "Golden Harvest"



In the Sept-October issue of the CSSA Journal.....

Mammillaria crinita — a new look at old names, by W.A. and Betty Fitz Maurice.

Gibson, Hammer, Maddams and Pilbeam receive the CSSA Fellow Award, by Larry Mitich.

A new *Echeveria* from the mountains of Zacatecas, by Charles Glass and Mario Mendoza-Garcia.

New Discoveries of *Pachypodium* from Madagascar, by John Lavranos and S. Rapanarivo.

A new subspecies of *Melocactus intortus*, by A. Areces-Mallea.

Plus the usual three regular columns:

Valley View Succulent Notes,
Cacti & Succulents for the Amateur, and
Spotlight on Round Robins.

And the Desert Breeze Editor's add-on:

Plus.....the Journal's newsletter with news of the affiliated clubs and (dare I call it that) gossip?

And I've been looking forward to the arrival of my copy of the CSSA Journal every two months since 1961.

The next issue is due to be mailed out on October 1, 1997.

Jon Weeks' Botanical Tour of Nuevo Leon and

A report of his talk at our last monthly meeting on August 7, 1997

Jon Weeks is a TCSS member and owner of LANDSCAPE CACTI. He has travelled many times through the Mexican states of Nuevo Leon and Coahuila. This area is renowned for its unique diversity of cacti and agaves. One very unique locale is Cañon Huasteca where numerous uncommon species occur. Jon's slide presentation was about some of the cacti and agaves which inhabit this area.

Jon received his B.A. from Gettysburg College in 1971 and his PhD from the University of Arizona in 1986. He then worked on the development of a crop plant irrigated exclusively with seawater. In 1992 after 12 years of research and plant breeding he successfully bred the first seawater irrigable crop plant, *Salicornia bigelovi*. Concurrently with this research Jon developed the farming practices to accommodate the selection of *Salicornia bigelovi*. He began his present endeavor, LANDSCAPE CACTI, in 1975. It is a desert nursery on Bopp Road, Tucson, and is devoted to growing and screening cacti and agaves for suitability in landscape use.

Jon's first trip to the Mexican States of Nuevo Leon and Coahuila was in 1989 when he went to the 300 mile long coastal estuary of Laguna Madre where halophytes grow in the salty water. Since then he has been travelling this area at least once every year. The capital of Nuevo Leon is Monterrey, Sierre Madre Occidentale, a city of some 11 million people. Saltillo is the capital of Coahuila.

Huasteca Canyon was the first major area of interest to us. This is where *Agave victoriae-reginae* grows on the steep mountain sides of the Canyon. The mouth of the Huasteca Canyon is narrow but it soon widens out and it is there where most of the plants we like grow. It is mainly limestone and granite.

Not far away grows *Echinocereus stramineus*, some clumps as much as 3 - 4 ft in diameter along the highway. A *Hechtia*, probably *texensis*, with a light green leaf and deep

red spines is quite common there. *Mammillaria heyderi* is also common, particularly in Huasteca Canyon and other parts of NE Mexico where it can be found growing in cracks in rocks. Jon showed us an *Echinocereus* sp. with stiff spines, name uncertain. Then a *Coryphantha*, or possibly *Ancistrocactus scheerii*. Other cacti we saw were *Echinocereus pectinatus*, a rigidissimus type, *Epithelantha micromeris* growing in cracks in a heap of inhospitable looking rocks. *Agave striata* was seen growing in Huasteca Canyon and around Saltillo. Also *Mammillaria hemisphaerica* and another similar to *M. plumosa*.

One of Jon's favorite plants is *Agave victoriae-reginae* - the flower stems grow out horizontally for a foot or so, then they turn up vertically. These wonderful spherical plants grow all up the canyon wall, amongst jagged rocks. They rarely offset, and even in death, the *A. victoriae-reginae* was attractive with its dried up inflorescence and seed pods. Jon is always reluctant to leave this area where these beautiful plants grow.

Other interesting plants Jon showed us were *Agave scabra* growing along the highway between Saltillo and Monterrey. Clumps of *Lophophora williamsii*, *Thelocacti*, all growing among the broken up limestone. *Echinocactus horizontalis* was there too and Jon showed a picture of his plant in flower in cultivation. At the Saltillo Agricultural College Universidad de Coahuila we saw three large *Astrophytum ornatum*s, each almost 30" tall. Another monster we saw was a 4 ft high *Echinocactus grandis*, 2 ft across, in Saltillo. And then a *Ferocactus pringlei* var *stainesii* almost 6 ft tall. Their fruits are quite juicy and taste like a tart lime.

In Saltillo area we saw *Turbincarpus valdesianus* with its bright pink flowers, 3/4" across. More *Echinocereus rigidissimus* on the hillsides and looking better there than those growing on the lower ground. *Ariocarpus retusus furfuraceus* too. Some of those clumps were nearly 1 ft across on a cliff side, growing among decaying plants, and *Hechtias*. *Echinomastus macdougalii* with its black tipped spines is good as a landscape plant.

Editor's Note: I particularly enjoyed revisiting, c/o Jon, some of the areas I had explored some 25 years previously. It was noticeable that development had crept in, even in Huasteca Canyon, where, I too, enjoyed the Agave victoriae-reginae. And thanks to our Program Chair, Margaret Pope, who continues to arrange such wonderful programs for our pleasure.

*
* <http://www.desertcactus.com/tcss/> *
*
* One of our new members *
* set up our home page on the world wide web. *
* Go find us on the Cactus & Succulent Mall. *
* Come to our meetings and learn the identity *
* of the member who gave so much time *
* to doing this for the benefit of our Society. *
* Come and meet ***** ! *
*

TCSS SEPTEMBER (2) MEETINGS

AUCTION!



SUNDAY SEPTEMBER 14

2 PM TO 3.30 PM

TUCSON BOTANICAL GARDENS

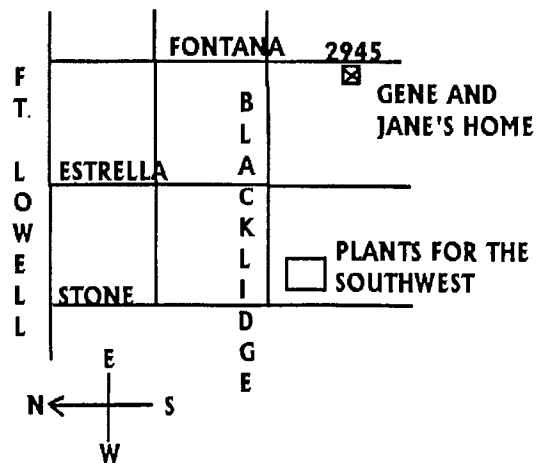
!! GET THERE EARLY !!

VISIT TO THE ARCHIE DEUTSCHMAN MAMMILLARIAS

SUNDAY SEPT 21 3 - 5 PM

2945 NORTH FONTANA, TUCSON

(520) 792-1592



Desert Breeze

Volume 2, Issue 5

OCTOBER 1997

Next Meeting

Sunday October 2

See pages 5 and 6
for details

THEN.....

We have a display at
the Orchid Society of
Southern Arizona's
Show on Sat and Sun
November 1 and 2
at the
MarketPlace USA
at Irvington
and Palo Verde
Tucson
see ▶ ▶ ▶

President's Message

WOW! That was the best Silent Auction our society has ever had, raising nearly \$2000 gross. In fact, over the last 2 years, Julie Turko, chairperson, and her wonderful group of volunteers and contributors have helped us raise almost \$3,000. *Thank you! Thank you! Thank you!* This year is quickly coming to a close and we must start looking to next year. How are **you** going to contribute more to the activities of the society? Certainly, running for office is a great way you can take a more active role. The Nominations Committee would love to hear from you. Their names and numbers are listed below. Please give them a call.

Sara Perper	743-3162
Mary Church	624-7976
Al Coritz	682-8333

Now is a great time to acquire some new plants. I am sure that our members

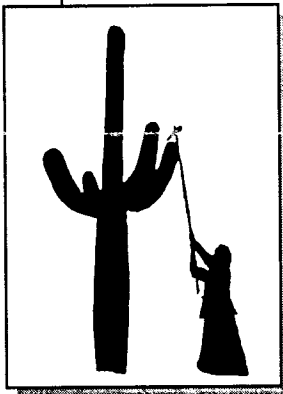
(Continued on page 2)

**TCSS Display - Nov 1 & 2
at the Orchid Society of
Southern Arizona's Show.
MarketPlace USA (INDOOR SWAPMEET)
3750 East Irvington Road
Tucson**

Saturday 10 a.m. to 9 p.m.
Sunday 10 a.m. to 6 p.m.

Lots of free parking so you have no excuse in not taking part! Other Societies who are expected to be participating are the Tucson Garden Club, The African

Violet Society, The Rose Society and the Iris Society, so when you get a break from helping, there will be lots of other interesting things to see. And there are several food kiosks in the MarketPlace including Mexican and Philippino food. Air conditioned for your comfort, too. Come and meet growers



of plants other than cacti and succulents. And maybe, we'll get more new members. More details of what is planned will be available at our October 2 meeting, but help will be needed from lots of members to handle this event.



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Tucson Cactus & Succulent Society
Founded 1960

OFFICERS AND BOARD 1997

PRESIDENT: Richard Wiedhopf 885-6367
VICE-PRESIDENT: Margaret Pope 795-1285

SECRETARIES:

Carol and Maury Clapp 908-9001
TREASURER: Arnold White 577-1348

BOARD OF DIRECTORS:

(terms expire December 31 of year indicated)

Dan Birt 1997

Dan Sims 1997

Sally Williams 1997

Miles Anderson 1998

Sara Perper 1998

Linda Ryan 1998

Myrtle Ethington 1999

Mary Odette 1999

Julie Turko 1999

AFFILIATE REPRESENTATIVE TO CSSA:

Norma Beckman 885-0669

NEWSLETTER EDITOR:

Carol Clapp 908-9001



Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society

Please send your copy by the 20th of the
month preceding the next month's issue
to the Editor,
Carol Clapp
P.O. Box 91560
Tucson
AZ 85752-1560

(Continued from page 1)

and friends who own nurseries would like you to drop by and make a few purchases. It's a great way to say thanks for their support during the last year.

Our holiday party is coming up on Sunday, December 14, 1997 at the Tucson Botanical Gardens. This is one holiday party you don't want to miss. You and your families are welcome and we are planning for a great time.

Thank you for all your support.

Dick Wiedhopf
President

**Our Sincere Condolences to our members —
Helen Housman on the loss of her husband Martin;
and to Robbin Baza on the passing of his father.**
We were glad to see both Helen and Robbin at our September meetings.

**Members'
Corner**



Welcome New Member

Joyce Abbot-Park 648-2913
18025 S. Placita del Florero, Sahuarita AZ 85629
(Family membership with Angelo LaScala)

Please make a note of new members
and the following changes in your TCCS Roster:

Members' change of addresses:

Cristina Wigert
1311-B E. Allen Rd, Tucson AZ 85719-1457

Angelo F. LaScala 648-2913
18025 S. Placita del Florero, Sahuarita AZ 85629

Please add to our 1997 Roster:

Dan Birt, add his business, **Dan's Desert Plants**

Bev White and Bob White, add their business,
B & B Cactus Farm

TCSS Web Page

<http://www.desertcactus.com/tcss/>



Congratulations and our thanks to **Lois Ladwig** a fairly new member to the TCSS who has set up our home page on the world wide web.

It is bringing in complimentary comments from all over the world - Spain, Australia to name but a couple of countries. Even parts of the **Desert Breeze** are now available electronically, on-line.

The article written by Gene Joseph on the Archie Deutschman Mammillaria Collection raised much interest, and we had a request to reprint it in a cactus society's journal in Australia.



Happy Birthday to the Saguaro National Park which became established from the former Saguaro National Monument three years ago - on October 14, 1994. May the Saguaros remain happy.

Paul C. Hutchison

On September 6, Paul Hutchison died at the Scripps Memorial Hospital in La Jolla, California.

Longstanding cactophiles will remember Paul for his contribution to the succulent world, even though he had been botanically inactive in recent years due to ill health. In the 1950s and 1960s he published numerous articles in the *Cactus & Succulent Journal* on Haworthias, cacti, Adromischus and Crassulas.

He led several expeditions to Chile and Peru and made notably large collections of herbarium specimens, now in the herbaria of many institutions. Paul was botanist at the Botanic Garden of the University of California, Berkeley, before leaving botany to begin a nursery (Tropic World) in Escondido, California.

In a future issue of the *Cactus & Succulent Journal*, the President of the CSSA, Larry Mitich, will be writing a biography of Paul.

The above information about Paul Hutchison came from Myron Kimmach, Editor of the CSSA Journal.

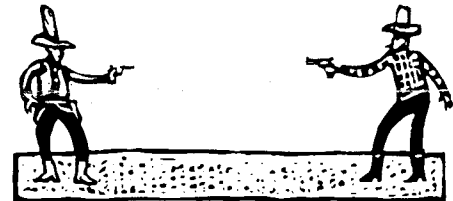
Our Nominating Committee is at work again!

Sara Perper, Mary Church and Al Coritz are our Nominating Committee this year.

They have the (maybe) unenviable job of finding members who will be happy to stand for election to fill the positions of the TCSS officers and board for the coming year.

Maybe you have already had a call from them? If not, and you think you might like to join the Board of Directors, or take another position in the Society, please contact Sara on 743-3162; Mary on 624-7976; or Al on 682-8333, and have a chat with them about it.

Maybe, just maybe, there will be competition for some positions and we end up having a....



Next year, 1998, looks to be an exciting year with our Stuck-on-Tucson II coming in the Fall. Remember - the more one can be involved in a group, the more pleasure one gets out of it.



Next Board Meeting

October 23

Time and Place:

7 P.M. College of Pharmacy
Check front door for room location



Message from Bob Ressler

Bob responded to our web page. He says
"If any [TCSS] members are interested in trading seeds or cuttings or plants of any tall types cactus let me know."

Bob's e-mail address is <Brcacti@aol.com>

Tel: (209) 599-6810 and address:

1454 Johanna Dr, Ripon, CA 95366



Nurseries owned or managed by our TCSS members

We recommend that if you plan to visit them you call first, as they are not all open every day.

MILES' TO GO

Miles Anderson, 6125 N. Noel Lane, Tucson AZ 85743

Tel: 520 682-7272

e-mail: miles2G@aol.com

DAN'S DESERT PLANTS

Dan Birt - Tel: 520 325-4967

Plants at Mesquite Valley Growers, Tel: 520 721-8600

8005 E. Speedway, Tucson AZ 85710

PLANTS OF THE SOUTHWEST LIVING STONES NURSERY

Gene Joseph and Jane Evans

2936 N. Stone Ave, Tucson AZ 85705

Tel: 520 628-8773 Wed, Thurs, Fri and Sat

PLANTAS DEL SOL

John and Dorothy Pasek,

6175 N. Noel Lane, Tucson AZ 85743

Tel: 520 682-8883

ARID LANDS GREENHOUSES

Julie Turko, 3560 W. Bilby Rd, Tucson AZ 85746

Tel: 520 883-9404 not Sundays

e-mail: aridtuc@azstarnet.com

LANDSCAPE CACTI

Jon Weeks, 7711 W. Bopp Rd, Tucson AZ 85735-9511

Tel: 520 883-0020

B & B CACTUS FARM

Bob and Bev White, 11550 E. Speedway, Tucson AZ 85748

Tel: 520 721-4687

We believe this to be the complete list of nurseries owned and/or managed by local TCSS members, but we offer apologies if any have been omitted. Please let us know if you have not been included, so we can list you in next month's Desert Breeze.

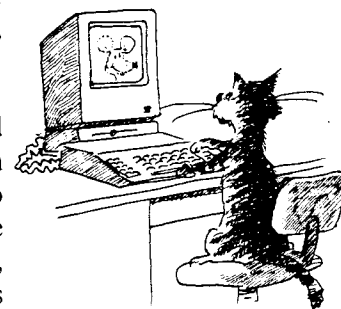
Our visit to Gene Joseph and Jane Evans' to see the Archie Deutschman Mammillarias.

Masses of mamms, lots of 'volunteers' in the pots, particularly euphorbias — a delight for us all to see.


Even some mesembs had grown by themselves in pots of mamms - goes to prove how easy it can be for young plants to thrive, even amongst the pebbles of the paths. Gene lets the

self-sown plants grow on to a reasonable size then pots them on. About 80% of the mammillarias which Gene grows were from Archie Deutschman in 1988. Some modification in watering and potting mix were needed as Archie's mix was 'tighter' than Gene's and held more water. Gene recommends that mammillarias have filtered light all day long. His adeniums and pachypodiums and other more tender succulents were in full sun, but will need some cold protection in winter. Gene finds that Euphorbia obesa is cold tolerant in Tucson, and that many other euphorbias can take temperatures down to 25 deg F. He waters all his plants by hand - a 1 1/2 hour chance to inspect his plants. He showed us Echinocereus viridiflorus var. nova which was found by Alan Zimmerman in Texas. Its flower is 1 1/2 inches in diameter and is green, similar to that of E. viridiflorus, and has yet to be named officially. It is a close relative of the native 'hedgehogs'.

It was interesting to learn about how Gene protects some of his more tender plants during the winter.



Thank you, Gene and Jane, for letting us see your plants. We appreciated it.



TCSS Dues

of \$15.00 (\$20.00 per family) should be sent to
Membership Secretary,
Maury Clapp
P.O. Box 91560
Tucson AZ 85752-1560
(Dues run from Jan 1 to Dec 31)



TCSS Program for the next few months

Meetings are at 7 P.M. at the Tucson Botanical Gardens, 2150 N. Alvernon Way, Tucson 85712 unless stated otherwise. Non-members Welcome!

Thursday Oct 2 Speaker - Kent Newland "Meet the Mammillarias"

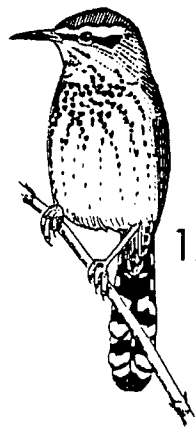
Kent Newland, a water Resources Specialist for the City of Phoenix, has grown Mammillarias for 25 years and has botanized in the field looking for mammillarias in the Southwestern U.S., Sonora, Baja California and Central Mexico. On October 2 at the TCSS monthly meeting he will present MEET THE MAMMILLARIAS. Mammillarias, pincushion cacti with around 250 species, are some of the easiest and diverse globular cacti to grow. This presentation will focus on the botany, classification, distribution, horticulture, propagation and selection of mammillarias for the hobbyist.

Kent Newland has been a Botanist for the City of Phoenix Water Conservation Office in charge of xeriscape education programs for the past 11 years. He received his B.S. in Botany from New Mexico State University. Previous to his present position he was a horticulturist for the Boyce Thompson Southwestern Arboretum for 15 years. He has also served as Chairman of the Arizona Municipal Water Users Conservation Committee and President of the Phoenix Chapter of the Arizona Native Plant Society. He is a member of the International Organization of the Succulent Plant Societies and of the Central Arizona Cactus and Succulent Society. At our mini-conference in October 1996 at

(continued in next column) ➤

ANNUAL FALL PLANT SALE

is for the birds



SATURDAY, OCTOBER 4

10:00 AM - 4:00 PM

SUNDAY, OCTOBER 5

12:00 NOON - 4:00 PM

MEMBERS ONLY PRESALE

SATURDAY, OCTOBER 4

8:00 AM - 10:00 AM

** Featuring plants that attract birds **

Nursery re-opens for the season

The TBG Nursery will resume its regular hours, Tuesday-Saturday 9 AM-NOON, beginning Tuesday, October 7

TUCSON BOTANICAL GARDENS

2150 N. Alvernon Way * Tucson, Arizona 85712
(520) 326-9686



the Foothills Mall, Kent presented the talk, OVERVIEW OF THE CACTI AND SUCCULENTS OF THE SONORAN DESERT, and a workshop on AGAVES FOR ARIZONA GARDENS. Both were interesting, informative and well received. This talk promises to be equally so.

Sat Nov 1, 10-9, and Sun Nov 2, 10-6

TCSS Display at the Show put on by the Orchid Society of Southern Arizona at MarketPlace USA, 3750 E. Irvington Rd, Tucson (Irvington/Palo Verde)

Thursday Nov 6 Steve McLaughlin will be speaking on research into Hesperaloe plant fiber.

Sunday Dec 14 Christmas Luncheon Party at the Tucson Botanical Gardens. Noon to 5 p.m.

NEXT MEETING

Thursday, October 2, at 7 P.M. in the Porter Room at the
Tucson Botanical Gardens
2150 N. Alvernon Way, Tucson, AZ 85712

**“Meet The Mammillarias”
with Kent Newland**



After seeing the Archie Deutschman collection of mammillarias
this talk should be of extra special interest to you.

Refreshments by those with family names beginning with A - D

Desert Breeze

Volume 2, Issue 6
DECEMBER 1997

Christmas Party

Come and have fun!

Join us for our annual Christmas party
on Sunday 14 December

at the Tucson Botanical Gardens.

We have the Porter House Room from 11 A.M. to 5 P.M.

This should give us time to get the tables set up and the food on the tables
so we can eat at 1 P.M.

YOUR HELP IS NEEDED

DON'T WAIT TO BE ASKED

JUST COME ALONG EARLY

AND HELP DECORATE THE TABLES

AND GET THINGS READY

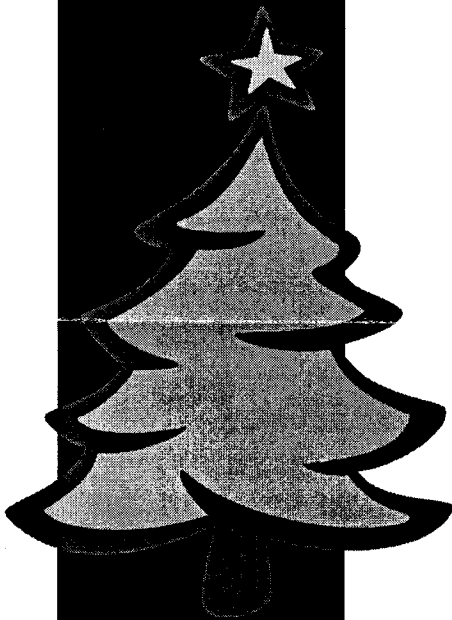
The TCSS will provide the turkey, coffee, punch etc. as usual, but it is requested that YOU bring along salads, desserts - enough to feed yourself and guests you bring along, plus five more people, although it has been suggested that it is more fun if you bring along enough to feed 10!

Last Christmas, there were not as many of us as usual at the Party, but

BOY DID WE HAVE FUN!

This year for entertainment, President Dick Wiedhopf will be showing some slides taken many years ago of club activities and members you may, or may not, remember.

Please bring along a gift (value about \$5.00), suitably wrapped,
for our fun gift swapping.



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Tucson Cactus & Succulent Society
Founded 1960

OFFICERS AND BOARD 1997

PRESIDENT: Richard Wiedhopf 885-6367
VICE-PRESIDENT: Margaret Pope 795-1285
SECRETARIES:

Carol and Maury Clapp 908-9001
TREASURER: Arnold White 577-1348
BOARD OF DIRECTORS:

(terms expire December 31 of year indicated)

Dan Birt 1997
Dan Sims 1997
Sally Williams 1997
Miles Anderson 1998
Sara Perper 1998
Linda Ryan 1998
Myrtle Ethington 1999
Mary Odette 1999
Julie Turko 1999

AFFILIATE REPRESENTATIVE TO CSSA:

Norma Beckman 885-0669

NEWSLETTER EDITOR:

Carol Clapp (520) 908-9001
e-mail: kitfox@azstarnet.com



Desert Breeze

is the Newsletter of the
Tucson Cactus & Succulent Society

Please send your copy by the 20th of the
month preceding the next month's issue,
to the Editor,
Carol Clapp
P.O. Box 91560
Tucson
AZ 85752-1560

THE SCRATCHING POST

Last month's meeting reminder notice (sent only to local members) introduced this new feature to the **Desert Breeze**.

Although no further written letters have been received, there were plenty of verbal responses to Maury Clapp's letter. It was interesting that **ALL** those who commented agreed with him.

How about the rest of you? Let's hear from you, too! Food for thought, eh?



This feature will also include miscellaneous notes, comments, small notices, and any odd bits of news which are not really big enough to make up into a separate article.

It has been said that we, the TCSS, should ask other organizations to join with us when we put on shows. Wonderful idea! But would it not be a better idea if we also participated in THEIR shows willingly when we are invited? Why should we expect others to join us when we don't join them?

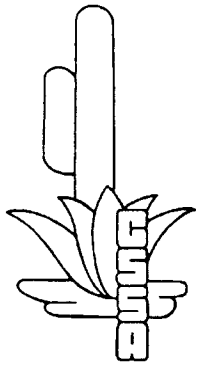
1998 DUES ARE DUE

LOOK FOR YOUR MEMBERSHIP CARD IN
THIS LOCATION IN THE **DESERT
BREEZE** FOLLOWING RECEIPT OF YOUR
1998 DUES. Send to M. Clapp,
Membership Secretary, P. O. Box 91560,
Tucson, AZ 85752. \$15 single, \$20 family.
Check the mailing label to see if your dues
are paid for 1998.

Want to join the C.S.S.A.?

Send check for \$35 for annual dues (USA members) to:
Mindy Fusaro, Box 35034, Des Moines, IA 50315-0301.

The journal of the Cactus & Succulent Society of America is superb. Edited by Myron Kinnach, it contains some travel-ogues, some technical articles too, but it does have some informal words, as well as the chatty newsletter edited by Mac Clarke. The **Desert Breeze** editor has enjoyed the CSSA Journal ever since the days when she had only a dozen plants 35 years ago. You don't need to be an 'expert' to enjoy it. See page 3 for the details of next issue's contents.



Journal of the CSSA

The Jan-Feb 1998 issue of the Cactus & Succulent Journal (U.S.) is another special issue, this one devoted largely to the subject of potting-soils for succulents. The entire contents of the issue are as follows:

Succulent soil sense, by Roger Brown.

Soils for succulents -a nurseryman's view, by Dan Bach.

Growing plants in low-organic soil-based mixes, by Ralph Peters.

Soil mixes for epiphytic cacti, by Dick Kohlschreiber.

Potting media for succulents in hot, dry climates, by Mark Dimmitt.

Shop-soiled wisdom, by Steven Hammer.

Potting soils -from cacti_etc.

Fieldnotes. *Mammillaria luethyi* -a new species has been described and an old mystery solved, by W.A. & Betty Fitz Maurice.

A new species of Aloe on Pemba, with comments on section *Lomatophyllum*, by Leonard Newton.

Cacti and steak -this must be Argentina, part 2, by James Mauseth & Roberto Kiesling. (Part 1 was in the Nov-Dec issue)

First report of female flowers for *Xerosicyos pubescens*, by Urs Egli.

Erythrina zeyheri, a crimson-flowered caudiciform from South Africa, by Charles Craib.

Spotlight on Round Robins, by Braden Engelke & Rita Fleishmann.

Two regular columns, Valley View Succulent Notes and Cacti & Succulents the Amateur, arrived too late to be included in this issue.

Readers will be startled to see photos of *Mammillaria luethyi*, a new species with spines shaped like umbrellas. This will become a much sought-after species!

Haseltonia 5 is expected to appear early February 1998. It's planned to bring out Haseltonia 6 in the fall of the same year.

Myron Kimmach

Editor
CSSA Journal

Welcome New Members



Carol Beiner 790-8653
5740 E. 23rd St., Tucson AZ 85711

Ron and Kathryn Fridland 325-8447
PO Box 40698, Tucson AZ 85717
e-mail: 103213,1665@compuserve.com

Susan Skirvin
6322 N Calle de Adelita, Tucson AZ 85718
e-mail: Smskirvin@aol.com

Change of Address

Barbara Angerhofer
1250 W Roger Rd, Tucson AZ 85705

Thanks to Eugene Loring

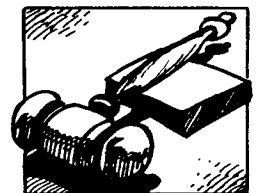
Members at the last meeting no doubt noticed the name tags were in a file in alphabetical order. This makes it much easier to locate YOUR label. This is due to the initiative of member Eugene Loring.

Thanks, Eugene.

Next Board Meeting

JANUARY ????

Time and Place:
7 P.M. College of Pharmacy
Check front door
for room location



Officers and Board Members should check with Dick Wiedhopf for date (not available for this issue).

Report on November 1997 Meeting of the TCSS Speaker: Steven McLaughlin on Hesperaloe Fiber

What an exciting meeting! Was there anyone who didn't ask a question afterwards? Steve McLaughlin enthused us all. Those of you who missed this meeting should be kicking yourselves.

Steve began his talk on *The Economic Uses of Hesperaloe Fiber* by discussing the qualities of the fibers of Hesperaloe and similar plants, including the Agave, Dasylirion, Yucca and even wheat straw.

He compared the fiber length to its width in each genus, giving the ratio of length to width. Hesperaloe has a fiber length of 3.20 mm and width of 20 microns and came out very favorably with the ratio of 215:1.

Steve compared the prices of the various pulps: the better quality pulp woods were up to \$2400 per ton, down to normal hardwood pulps at \$450 to \$550 per ton, based on July 1993 figures.

Hesperaloe leaf fiber is bright white, doesn't need to be bleached, and is more environmentally friendly.

Steve compared breaking lengths of the fiber of the various genera of fiber plants. The breaking length is determined by how much you can beat up the fiber before you can make paper out of it.

Grocery sacks made from various fibers are used as a test. The [sack] paper mustn't break. The burst strength is tested, with comparisons of tear-tensile strengths. Hesperaloe came out favorably in every test done by the researchers into fiber. Manufacturers also tested it and found Hesperaloe very favorable.

Next question was whether Hesperaloe made a good crop to grow. Steve tested

these plants on his land to find out how well they grow. Should we really consider Hesperaloe as a succulent plant?

Test results from a plantation started in 1988, and harvested in 1993 showed that:

In the first year, the growth was hardly measurable, but increased annually until fifth year when it grew pretty well. They grew slowly at first like many other succulents, then once established, grew rapidly. Graphs depicted rates of growth. Years 2 and 3 sped up a bit, but in years 4 and 5 growth was fast. Tested with various levels of irrigation and fertilizing.

Third year, started with single growing point. Flowers appeared in year three, then lateral growing points appeared around the original rosette, so then there were maybe 4 plants growing where in the first 3 years there was only one plant growing.

The plants were cut off a few inches above the ground at 8 years old. By then 5 lateral growths/rosettes had developed, forming an almost spiral type arrangement.

The stand was shown at 5 years of age... almost unbelievable when compared with plants at 1 year.

When cutting plants down, the fiber strength makes it hard to cut cleanly and the ragged cuts on leaf edges may cause problems with infection, although this has not yet been researched in detail. When mown back in February, more leaves grow from the dried up rosettes.

One year's growth from the cut back plants was vastly better than one year's growth from newly planted plants. Twice as much material at end of 3 years growth was produced as compared

to that produced by 2 year old plants.

Hesperaloe behaves in growth very much like a well mown lawn. Its growing point is at its base, just like grass.

Towards dusk photosynthesis increases and the leaves take up more CO₂ right up to dawn when the photosynthesis rises to its maximum, same as in cacti. Later in the day when the sun gets high in the sky photosynthesis stops altogether.

How does a Hesperaloe do this when it looks so unlike most succulents? It doesn't have a huge water reserve. Answer not known!

The water content of Hesperaloe leaves is not high. To conserve water, all the leaves stick straight up towards the sun, so they don't absorb much mid-day light and heat, but they do catch light early and late in the day. Steve showed us a picture of a Brazilian fiber cutter which is used here: its technology produces great fiber when it works, but unfortunately the machine doesn't always work! After a five hour run, the Hesperaloe wins, and the blades lose. Much easier to get fibers out of yuccas and Agave lechuguilla than Hesperaloes.

Maricopa area has experimental farm when some Hesperaloes are grown for research purposes.

Experimenting with things other than chain saws! Rotating saw blades tried too. How fast should they be run and so on. Once the fiber is cut, it can be dried and rolled into a bale.

Steve compared water irrigation and overhead watering... irrigation with troughs/furrows between rows. He uses drip irrigation in Tucson. Does not yet know the consequences of giving them a lot less water. Commercially a desert plant will

(Continued on page 5)

(Continued from page 4)

do better if it gets some water in addition to that which nature provides.

Hesperaloe fiber is stronger than softwood, but still has to beat sisal and hemp.

So far, the researchers have worked out only how much it costs to grow - industry will have to figure out the costs of producing the fiber commercially. Prices of pulp woods have fluctuated a lot over recent years. Keeping the attention of industry is hard; when price of pulp goes up industry gets interested in Hesperaloe, but when the price of pulp drops, no one is interested in Hesperaloe.

There are probably 1000 plants growing in cultivation to every one growing in the wild. Will fields of Hesperaloe become as common as cotton in Arizona? Although Hesperaloe is already known to be an excellent fiber, a farmer would need to plant very many acres of Hesperaloe per fiber mill to be economical. Maybe it could be grown in Argentina and Chile more economically?

Responses to questions:

Most desert plants don't show much response to watering for some days. A lot of water at once allowing it to sink deep is better than a little occasionally. Hesperaloe roots are not very deep.

Can freezing and insects attack Hesperaloes? It is very frost tolerant. Steve planted a field of Hesperaloe in mid-October, then an unexpected cold spell struck, but none of the transplanted seedlings were lost, although some of those which hadn't been transplanted died.

Hesperaloes evolved in cold conditions. Not much insect damage in the wild, nor has much been seen in cultivation. However, it takes a while for herbivores to catch up. Although seed pod and fruit damage have been seen. Not easy to chew Hesperaloe. Do not anticipate a problem with chewed plants. More concerned with pests attacking roots.

How about recycling Hesperaloe paper? Each time paper is recycled it becomes weaker.

To use 10% Hesperaloe fiber with 90% recycled fiber would help hold it all together. *Much easier to get wood out of the paper, than paper mills out of the wood.* 70 species, primarily *H. funifera*, are on test. Red flowered yuccas out in the medians have really short fibers, but *H. funifera* has the longest fibers.

How is this project funded? USDA money helps fund this, paper industry helps fund the 40 acre test plantation. 60% from James River Company, 20% from USDA. Newsprint is mixed using hardwood, with some softwood to help hold it together while making it.

How to make a clean pulp? This is a major hang-up. Once solved, there may be more companies who will be willing to invest in plantations.

How is Hesperaloe pollinated?

H. parviflora with its tubular flowers is attractive to hummingbirds; *H. funifera* flowers are nocturnal and break down in the day by noon. Flowers of *H. funifera* are white "open dishes" and the pollinator is not known for sure.

Who does the pollination in nature? It is closely related to Yucca which has a good relationship with a moth which fertilizes it.

Fibers are chains of cells, adhering together, of cellulose, heavy cellulose and lignum (gum).

Low lignum <5% in Hesperaloe, less than other pulps.

Steve attended the meeting of the Association for the Advancement of Industrial Crops in Saltillo, Mexico.

He believes there is no money to be made in recycling paper in this country. Most of the old newspapers gathered here are exported for recycling and fetch \$82 per ton from overseas.

Small companies are more likely to be making some money out of recycling newsprint.

Can Hesperaloe plants be bought in Tucson? Yes. *H. funifera* is readily available in Tucson.

Does it die after flowering? When a rosette has flowered, its meristem is used up, so the next flowers will come from the newer rosettes surrounding

the original rosette. Hesperaloe flowers for a really long time, whereas Agave has "big bang" flowering, whereas yucca lasts two to three weeks.

What is in the leaves? Their leaves have 1.1% of nitrogen, and about 7% protein. Aren't you thinking of the wrong market?" asked Arnold. "How about the cellulose market?" Maybe it would take some sort of cooperative with farmers and mills to explore that area, and that would take some very creative business planning to do it.

At the conclusion of his talk, Steve McLaughlin said,

"I have very much enjoyed the research into how the plant grows, but now perhaps the farmers can take over the commercial side of the project. The business plan is not really my line; but I expect Hesperaloe to remain an interesting research project for a long time yet."

Report prepared by Editor,
Desert Breeze

Report of the Nominating Committee at the Meeting on 6 November 1997

Sara Perper reported on nominations for 1998 Officers and Board:

President:	Dick Wiedhopf
VP:	Margaret Pope
Secretaries:	Maury Clapp and Carol Clapp
Treasurer:	Arnold White
Board Members:	Dan Birt Al Coritz Clint Jarvis Lois Ladwig

Carol, Secretary, said that board may consist of up to 11 members. Dick, President, said that this is up to board and if we have need for more board members... so there may be a vote!

Other notes from Board

The Tucson Botanical Garden invited us to put on show next April during their Home tour event. Board thought it a great opportunity to attract more members etc. and accepted the TBG invita-

(Continued on page 7)

Is There A Santa Claus?

This scientific inquiry into Santa Claus is just a little bit of Christmas fun to give your gray matter something to work on over the holiday period.



1) No known species of reindeer can fly. **But** there are 300,000 species of living organisms yet to be classified, and while most of these are insects and germs, this does not **completely** rule out flying reindeer which only Santa has ever seen.

2) There are 2 billion children (persons under 18) in the world. **But** since Santa doesn't (appear) to handle the Muslim, Hindu, Jewish and Buddhist children, that reduces the workload to 15% of the total - 378 million according to *Population Reference Bureaux*. At an average (census) rate of 3.5 children per household, that's 91.8 million homes. One presumes there's at least one good child in each.

3) Santa has 31 hours of Christmas to work with, thanks to the different time zones and the rotation of the earth, assuming he travels east to west (which seems logical). This works out to 822.6 visits per second. This is to say that for each Christian household with good children, Santa has 1/1000th of a second to park, hop out of the sleigh, jump down the chimney, fill the stockings, distribute the remaining presents under the tree, eat whatever snacks have been left, get back up the chimney, get back into the sleigh and move on to the next house. Assuming that each of these 91.8 million stops are evenly distributed around the earth (which, of course, we know to be false but for the purposes of our calculations we will accept), we are now talking about .78 miles per household, a total trip of 752 million miles, not counting stops to do what most of us must do at least once every 31 hours, plus feeding, etc. This means that Santa's sleigh is moving at 650 miles per second, 3,000 times the speed of sound. For purposes of comparison, the fastest man-made vehicle on earth, the Ulysses space probe, moves at a poky 27.4

miles per second - a conventional reindeer can run, tops, at 15 miles per hour.

4) The payload on the sleigh adds another interesting element. Assuming that each child gets nothing more than a medium-sized lego set (2 pounds), the sleigh is carrying 321,300 tons, not counting Santa, who is invariably described as overweight. On land, conventional reindeer can pull no more than 300 pounds. Even granting that a flying reindeer (see point #1) could pull **TEN TIMES** the normal amount, we cannot do the job with eight, or even nine. We need 214,200 reindeer. This increases the payload - not even counting the weight of the sleigh - to 353,430 tons. Again for comparison this is four times the weight of the QE II.

5) 353,000 tons traveling at 650 miles per second creates enormous air resistance - this will heat the reindeer up in the same fashion as spacecraft re-entering the earth's atmosphere. The lead pair of reindeer will absorb 14.3 **QUINTILLION** joules of energy. Per second. Each. In short, they will burst into flames almost instantaneously, exposing the reindeer behind them, and create deafening sonic booms in their wake. The entire reindeer team will be vaporized within 4.26 thousandths of a second. Santa, meanwhile, will be subjected to centrifugal forces 17,500.06 times greater than gravity. A 250 pound Santa (which seems ludicrously slim) would be pinned to the back of his sleigh by 4,315,015 pounds of force.



**I
think
that we
shall
always
see
God's Gifts
upon our
Christmas Tree.
You cannot touch
them with your hand
Yet, they are there
at your command.
There's Joy and Faith
and Hope renewed; there's
Laughter for a Happy Mood;
There's gratitude for
each new day...A time to think
a time to pray...The Christ
idea, with Holy Light shines clear
to make your pathway bright.....
These things are yours if you can see
God's Gifts upon your Christmas
Tree.
Merry
Christmas
and a
Happy
New Year**

*Christmas tree to the left
is by Marie Stalnaker, from Winter 1972 Bulletin
of the Arizona Federation of Garden Clubs, Inc.*

Land's talk in October

His usual excellent hand-outs to those present and familiars to our club in October, it did not do our usual write-up of his talk. Additional copies of the hand-outs were available also at the November meeting. If you missed out and are interested in getting a copy, please contact our Program Chairman, Margaret Pope, and ask if she has any left.

(Continued from page 5)

tion. Will get more info out to members in future newsletters.

"Learn more, do more, can't force you to help with these things. We'll give you all the opportunity to take part in these things," said President Dick Wiedhopf.

Second major event next year will be the mini convention in the fall. There will be a steering committee, meeting 1 or 2 times a month putting it together. No further news from anyone beyond Maury and Carol on venues. Dick expects board will communicate by phone and choose a venue.

Dick spoke on Christmas Party.

"Feed 10," says Bobette Levy. "It works well." Have gift exchange, wrapped interestingly. Pick a number, pick out a gift, then pick another number, pick that gift or one which someone has picked up already. (Great fun last year!)

Bobette Levy suggested having a combined cactus with gem and mineral show, for example. Dick said she was absolutely right and we should get other associations to join in with us at a show.

Door prize winners:

Bobette Levy won *Conophytum* sp.

Susan Fridland won *Mammillaria fordii*

Sara Perper won *Gasteria armstrongii*

JR Trevas won *Haworthia retusa acuminata*

And in the raffle -

Carol Clapp won *Pachypodium geayii*

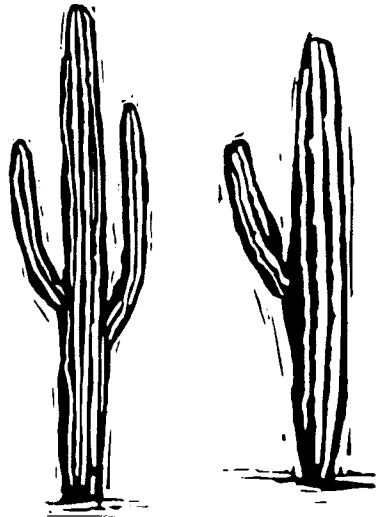
Paul Magoon won *Mammillaria lindsayii*

Free plants were *Mammillarias* and baby boojums.

Meeting closed 8.45 p.m.

January 1998 Meeting - JAN 8

Our first meeting of the new year will be on **JANUARY 8, 1998** at the **Tucson Botanical Gardens**, at 7 P.M. The speaker will be **Bob Webb** on the subject of the **LONGEVITY OF SUCCULENTS IN BAJA**



Crazy Saguaros?

How many of you saw the two large Saguaros in full bloom in the second week of October this year?

They grow within about twenty feet of each other just north of Mile Wide Road in the west 12200 block.

Usually Saguaros bloom in May and June, so what made these two adjacent plants do it in October?

DO YOU HAVE A BUG TOO?

So many of our members have had bugs and other sickness recently we wish them a speedy recovery and hope to see them ALL again very soon.

They include (in alphabetical order):

Norma Beckman, following surgery earlier this year, necessitating a long recuperation. Norma says she is well on the way to being her old self again and plans on coming back to our meetings very soon now;

Maury Clapp, for his weeks of pneumonia and valley fever;

Myrtle Ethington, also for her long pneumonia;

and

Any other members, whose bugs we do not know about.

Tucson Cactus & Succulent Society
c/o Tucson Botanical Gardens
2150 North Alvernon Way
Tucson, AZ 85712

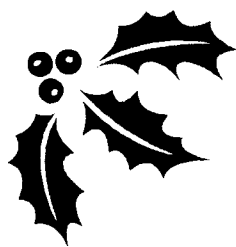
December 1997 Newsletter



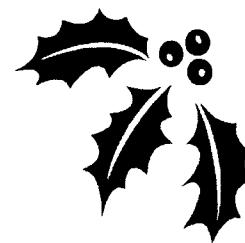
Desert Breeze



NEXT MEETING



CHRISTMAS PARTY



Sunday, December 14, in the Porter Room at the
Tucson Botanical Gardens
2150 N. Alvernon Way, Tucson, AZ 85712
11 A.M. to 5 P.M.

To participate in the FUN GIFT EXCHANGE
bring along a wrapped gift (value ~ \$5).
For more details of the entertainment,
please see front page this issue.



Everyone please bring a salad or a dessert,
enough for you and your guests, plus 5 to 10 others.
Turkey and coffee and punch will be provided
by the club.

