



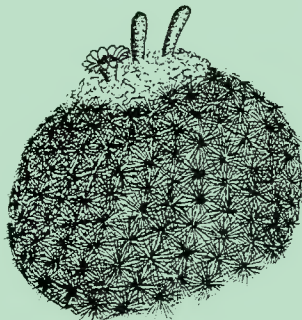
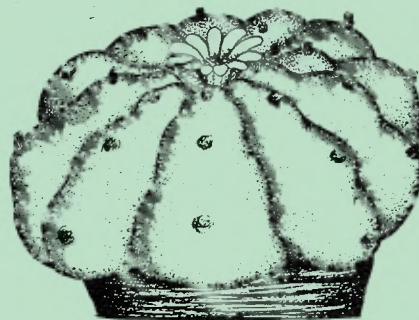
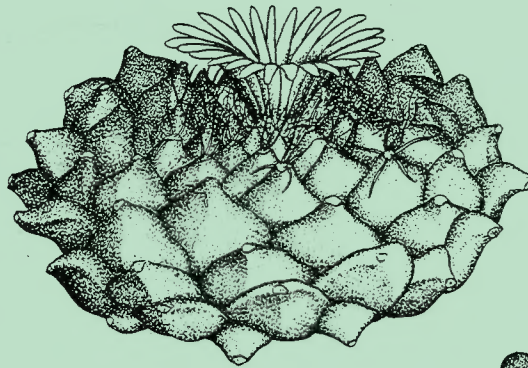
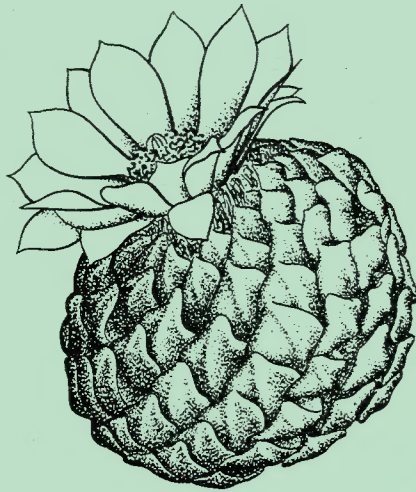
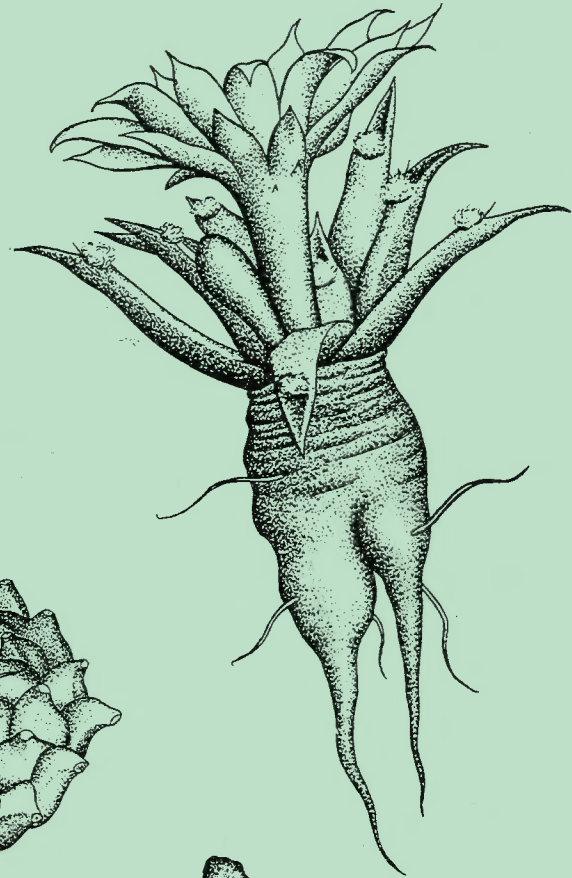
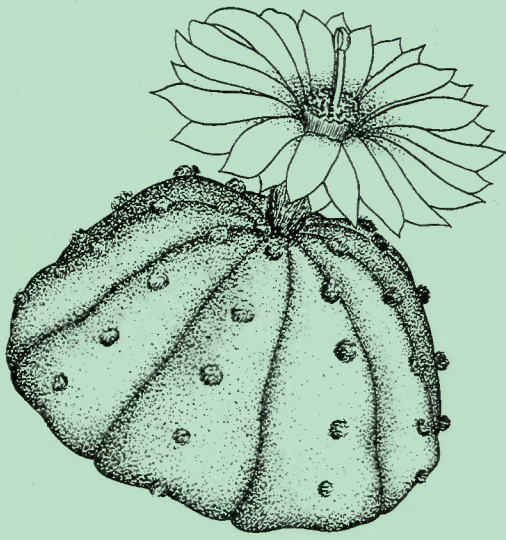
Mammillaria thornberi

ESPINAS Y FLORES

NEWSLETTER of the SAN DIEGO CACTUS & SUCCULENT SOCIETY, INC.

A Non-Profit Public Benefit California Corporation

VOLUME XXXII NUMBER EIGHT SATURDAY, AUGUST 9, 1997 @ 1:00PM



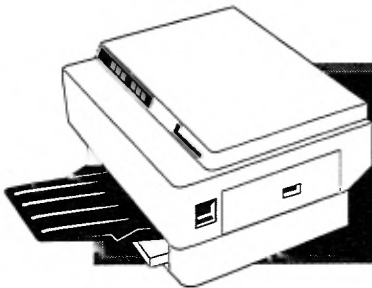
August Program: Edible Cacti

Dennis Sharmahd, organic gardener extraordinaire, will be giving a "multi-media" presentation on creating edible landscapes with an emphasis on edible cacti. In addition to the slide show he will be offering samples of choice cactus fruits for the audience's enjoyment.

Known as "Mr. Organic" by his friends in the produce /agricultural business, Dennis has a great passion for creating organic edible landscapes. He has worked at the Golden Door and for Exotica Rare Fruit Nursery and presently provides organic speciality seeds through his company Southern Sun Seeds, for a long list of health food stores, nurseries, new-age apothecaries, etc. Dennis relates that in addition to having several varieties of edible cacti and a variety of fruit trees too numerous to mention, he also has growing in his own garden 35 pepper varieties and 30 different kinds of tomatoes, including a black spicy type that sounds totally delectable. So, moisten those taste buds, you're in for a treat!!

About our cover: Can you name the exceptional cacti reproduced here? [From Marshall and Bocks, *The Cactaceae*, c. 1941.] Many are mentioned in our Cactus of the Month article by Ed DeLollis. If you can get them all by genus and species, consider yourself an expert. If you can recognize just one, you may have encountered a substance abuse problem at some point and time in your life! If you cannot get any, . . . Mensa meets on the second . . .
Answers on page 3.

Please send your letters, artwork, poetry, Cactus or Succulent-of-the-Month articles, puzzles, comments, or criticisms, etc. to:



MICHAEL & JOYCE BUCKNER, EDITORS
4822 SANTA MONICA AVENUE, #103
SAN DIEGO, CA 92107
PHONE OR FAX: (619) 222-3216

PUBLICATION DEADLINE IS THE 20th of the prior month.

Espinas y Flores, the newsletter of the San Diego Cactus and Succulent Society, Incorporated, P. O. Box 33181, San Diego, CA 92163-3181, is published monthly with the exception of a combined May-June issue (*11 issues per year*). Newsletter circulation is approximately 350 with about 300 issues going to members (*one issue per household*) and an additional 40-50 issues going to educational institutions, botanical societies, cactus & succulent nurseries, local publications, related natural history events & exhibits, and other interested groups or individuals upon request. Subscriptions (*membership dues for an individual*) are \$10 per year for bulk mail within the USA.

Opinions stated in the articles and editorials of *Espinas y Flores* are solely the opinions of the authors or editors and do not necessarily represent the opinions of other SDC&SS members, the Board of Directors, or the organization in general. All materials submitted to *Espinas y Flores* for possible publication may be edited for form and content. All material in the *Espinas y Flores* may be reprinted by non-profit organizations (unless such permission is expressly denied in a note accompanying the material) provided that proper credit is given to the *SDC&SS Espinas y Flores* and the author, and one copy of the publication containing the reprinted material be sent to the editors. Reproduction in whole or part by any other organization or publication without the permission of the editors is prohibited.



Here's a Hot News Flash: PBS will be filming the inner and outer workings of the Inter-City Cactus & Succulent Show & Sale. So, if you have a very special plant that you believe is worthy of its own "fifteen minutes of fame", then clean it up (*staging & presentation counts for 20 points - 20%*), make sure you've got its name spelled correctly (*nomenclature counts for 5 points*), and bring it in! Set-up times are: Wednesday, August 13, 1pm - 9pm; Thursday, August 14, 9am - 9pm; Friday, August 15, 9am - 3pm. PBS Film Crew due to arrive on Friday afternoon; they will be filming various aspects of the show through breakdown on Sunday, August 17th, starting with the judging which begins promptly at 5pm on Friday. **Please Smile for the Camera!!**

The Southern California Inter-City Cactus & Succulent Show & Sale is held at the Los Angeles County Arboretum, 301 N. Baldwin Ave., Arcadia, CA. Sale begins for participants at 3pm on Friday; Show & Sale open 9am through 5pm on Saturday, August 16 and Sunday, August 17. Sponsored by Long Beach C&SS, L.A.C&SS, and San Gabriel Valley C&SS, this show is **FUN - FUN - FUN!! Quality and Quantity!!!** Educational Walks, Talks, & Demos will be held on both days, and PBS will probably be filming some of these, too! So please wear a clean T-shirt!! Walk & Talk Program Schedule for Saturday: noon - Gene Joseph - Training Ficus to Grow on Rocks; 1pm - Woody Minnich & Michael Buckner - The Show Table, How Judges Choose the Trophy Winners; 2pm - Ron Burnight - The Name Game; 3pm - Michael Vassar - All About African Succulents. On Sunday: noon - Joe Stead - Propagation of Succulents; 1pm - Michael Buckner & Woody Minnich - Staging Cacti & Succulents; 2pm - Charles Spotts - All About Cactus; and at 3pm - Rudy Lime - SMOLA, Succulent Bonsai! Sales area is noted for having those very special hard-to-find plants. Every year we take home a few noteworthy gems! For information on show entries or if would like to volunteer to assist with show preparation, clerking, or security please contact show chairmen: Woody Minnich @ (805) 944-2784, Chris Rogers @ (818) 891-6998 or Larry Grammar @ (562) 599-1146.

In addition to this being a terrific show, there is also a great Awards Banquet on Saturday night, which is held at Capistranos, 211 East Huntington Drive, Arcadia (*just west of the 210 Fwy*) with a social hour starting at 5:30pm and dinner being served at 7:00. The buffet style dinner which has always been delicious and abundant with a wide range of selections to please even the pickiest of eaters cost \$25. Program at the Awards Banquet includes show review, awards, a bonsai pot gift to all show participants present, and an auction of 12 show quality specimen plants staged by master growers. Please contact Charles Spotts @ (805) 237-2054 no later than August 15 for banquet reservations. To request pre-show newsletter contact Carol & Joe Wujcik @ (714) 963-3146.

August 14 - 16: The Second Annual Baja California Botanical Symposium presented by the San Diego Natural History Museum, co-sponsored by the Universidad Autónoma de Baja California Herbario BCMEX. This will be held at the Museum in Balboa Park. This symposium provides an international forum for botanical researchers investigating the flora of the Baja peninsula and adjacent areas. Binational format; content will be conducted in Spanish and English. For registration form or further information contact Dr. Jon Rebman, Dept. of Botany - SDNHM, P.O.Box 1390, S.D. 92112; (619) 232-3821 ext# 247; e-mail: sdnhmrebman@earthlink.net.

September 27: Huntington Succulent Symposium - This year's symposium will be held in conjunction with the IOS Convention on Friday, September 26 and Sunday, September 28th. Info: (818) 405-2160.

Answers from our cover (*Left to right; top to bottom*): *Astrophytum asterius*, *Pelecypora aselliformis*, *Ariocarpus (Neogomesia) agavioides*, *Encephalocarpus strobiliformis*, *Obregonia denegrii*, *Epithelantha micromeris*, *Lophophora williamsii* (Peyote), *Aztekium ritteri*, and the smallest of all cacti (*bottom center*) *Blossfeldia liliputana*.

Happy 50th Birthday!!! Michael Buckner - Aug 2 and Wendell (Woody) Minnich - Aug 7 - Young Men!!

~~The Monthly Benefit Drawing~~

If you did not see our spectacular table at the July meeting, you missed out on a great opportunity to participate in one of the best drawings ever! Twenty-five (25!!) plants, beautiful plant as such as *Euphorbia unispina*, *Euphorbia abdelkuri*, *Eulophia paniculata*, *Haworthia* cv. "David Grigsby", and *Rauhia peruviana*, swelled with pride as they awaited adoption by our happy winners. We are very grateful to the following plant donors for helping to make this such an exciting event.

Steven & Rowena Southwell - R.S.V.P. for their generous donation: *Cyphostema juttae*, *Echeveria agavoides*, *Notocactus magnificus*, *Mammillaria parkinsonii*, two (2) *Echinocereus pectinatus rubrispina* and two (2) *Mammillaria guelzowiana*; Rudy & Teresita Lime for the *Euphorbia ammak* cv. *variegatum* and the *Mammillaria scolli*; Mark Palandri for contributing a lovely *Melocactus disciformis*; Nibby Klinefelter for the *Aeonium* species garden planter; Joe Quijada for the *Melocactus oreas*; Kay Quijada for the *Tillandsia albertiana*; and Betty Athy for the *Bombax ellipticum*.

Many, many thanks to all of you that showed your support by participating. Please remember, you are always invited to participate by donating one of your "exciting extras"; call our hardworking-world-searching-plant-procurer: **Betty Athy at (619) 469-7647 with your donation.**

Thanks Folks!! **Kay Quijada**

P.S. Again, thank you **Laura & Tom DeMerritt** for doing such a nice job while I was out of town!

CONDENSED MINUTES OF THE GENERAL MEETING OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY JULY 12, 1997

The meeting was called to order at 1 p.m. in room 101, Casa del Prado, Balboa Park by Tom Knapik President.

Following the pledge of allegiance to the flag, Ethel Standish introduced the guests that were present. Several of the guests had come to San Diego for the CSSA Convention and were from foreign countries or other parts of the United States.

ANNUAL SHOW AND SALE The volunteer workers who were involved with the Annual Show and/or Sale were acknowledged and thanked by Tom Knapik.

Tom advised that several items had been left behind and were on the table at the front of the room. He asked that members who might be missing something check these items and claim what is theirs.

The exhibitors who won trophies at the Show were introduced and their trophies were awarded to them.

Tom indicated that it is our goal to improve our Show each year, and to do this we will need more exhibitor participation.

CSSA CONVENTION Individuals who had participated in the volunteer work for the Convention were recognized and thanked -- many of whom had spent many hours in making this event a success. Special recognition was given to Martin Mooney and Joey Betzler for their involvement, Tom Knapik and Rudy Lime for their efforts in the display area, and Tom DeMerritt for trouble shooting the audio/visual portion of the Convention.

Tom Knapik pointed out that the remaining inventory of the T-shirts, posters and pins are being offered to our members at a special price as a memento of this event.

It is felt that the Convention was a success and was enjoyed by those who attended. The next CSSA Biennial Convention will be held in Las Vegas in April, 1999.

PLANTS OF THE MONTH / BRAG TABLE The genus *Escobaria*, Cactus of the Month, was discussed by Ric Newcomer, and *Aeoniums*, Succulent of the Month, was presented by Nibby Klinefelter. The Bragging Table was conducted by Tom DeMerritt.

Tom Knapik reminded those present to buy their tickets for the Benefit Plant Drawing, and advised that cakes have been provided for our CSSA guests.

Michael Buckner announced that botanical prints are available for purchase as the result of an exchange for the Strawberry Press advertisement that appeared in this month's newsletter. These prints will be sold at \$20.00 each.

Following the refreshment break, tickets were called for the Benefit Drawing.

PROGRAM Tom Knapik introduced Attila Kapitany and Rudolf Schulz, co-authors of *Copiapoa In Their Environment*, who gave a slide presentation on *Copiapoa* in habitat.

There being no further business, the meeting was adjourned at 4:15 p.m.

Beverly Kirkegaard, Recording Secretary

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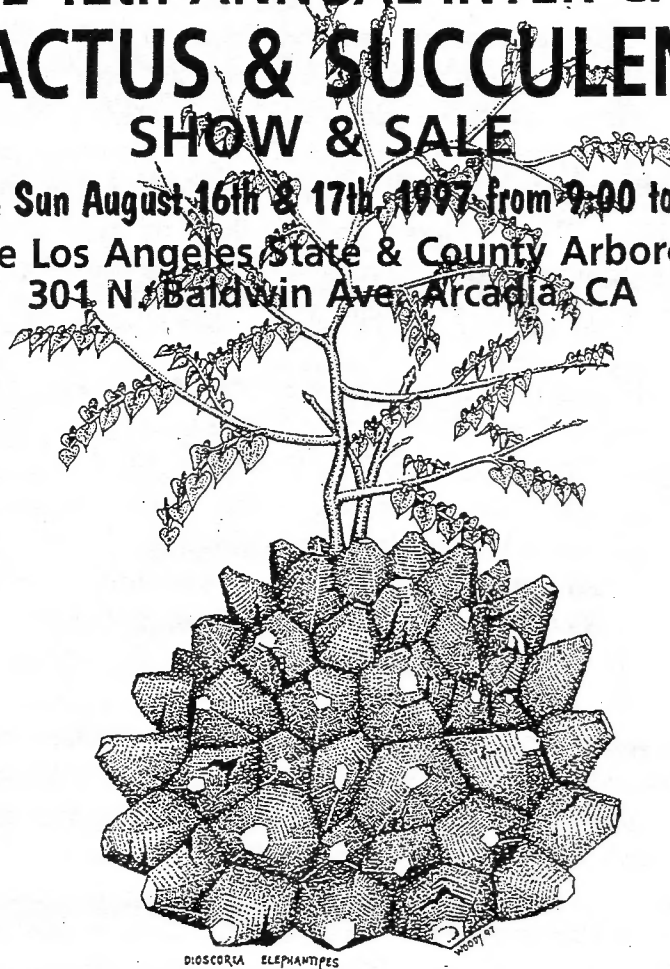
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The SDC&SS Supports the Anza-Borrego Desert Foundation

During the July meeting, the board of directors had the pleasure of receiving a visit from Jim Dice of the California State Fish and Game Department on behalf of the Anza Borrego Foundation, Jim, a well known member of our club, was invited to come and explain to us the details of a very unique opportunity relating to land acquisition for **Anza Borrego State Park**. Jim informed the board that a very special area of desert habitat has become available from a private holding for purchase by park interests. The area is an 884 acre parcel on the extreme western side of the park near scissors crossing known as Sentenec Canyon and Cienega. This area contains a year round natural stream and riparian habitat that is of outstanding character. Anyone familiar with Borrego knows the "canyon walls that drip of cactus," echinocereus, barrel cactus, opuntias, and brittle bush as one drives into the park from Hwy.78 outside of Banner. Sentenac canyon offers a dramatic entrance into Anza Borrego with its steep stone walls and outstanding desert flora. Unfortunately, most of the entrance into this canyon is outside of the park and is of critical concern for acquisition into the park holdings. Many different groups are involved in generating the funds needed to purchase this area for park expansion. My opinion and others hold that Sentenec Canyon is one of the top regions of cactus habitates in San Diego County: In order to help this cause the board has agreed to match private donations from the club membership up to a total of \$500.00. More details on this important issue will be available at the regular meeting. In addition, I would be glad to discuss this issue in person. See ya soon. *Edward M. Nolan.*

The 27TH biennial CSSA convention went well thanks to the San Diego Cactus and Succulent Society. I cannot take the credit, the credit goes to the people mentioned below. I would like to make a special thanks to Joey Betzler, without his special talents and long hours of preparation the convention would not have run as smoothly. He was always at hand to help. Tom Knapik was a special contributor as well that made the showroom a special place to view the auction plants, and a plant show that will be hard to top by any convention standards. Tom DeMerritt was invaluable as the chief audio visual technician for the convention. He kept his cool and handled all the problems that arose with those odd sized slides. A special acknowledgment of his efforts was mentioned at the post convention meeting.

The following SDCSS members attended the convention as full or day registrants: Elizabeth Athy, Shirley Berry, Joey Betzler, Tom Birt, Michael Buckner, Chris Clayton, Kevin Coniff, Thomas DeMerritt, Carol Detterman, Jeanette Dutton, Ms. Lynn Elliott, Philip Favell, Phyllis Flechsig, Dylan Hannon, Judith Hannula, Beverly Kirkegaard, Tom Knapik, Madelyn Lee, Rudy and Teresita Lime, Robert Linstead, Christina Miller, Martin & Pat Mooney, Renee O'Connell, Jean and William O'Daniel, Mark Palandri, Joe and Kay Quijada, Herb Stern, Alan and Fé Weiss, John Williams, Andrew Wilson and Carol Jean Wolcott. SDCSS was awarded a certificate for having the highest number of members attending the convention.

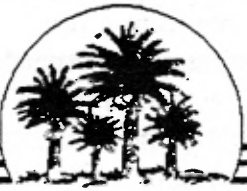
Many of the above attendees were involved in helping with the convention. Several people also involved, though not registered were: Tom Stiko, Ana Stern, D'erdra Smothers, Michelle Heckathorn, Ethel Standish, Ed Nolan and last but not least Dan Hammonds. These members gave up their valuable their time to help. Another effort that I was especially pleased with, the cooperation from other San Diego County CSSA affiliates.

Paul Steward, Ron Chisum, Camille Horak, Eleanore Hewitt and Stan Yalof are members of the Palomar CSS. They helped with the plant show and the nursery field trips. Phil Peck, Jill Metzner and Jeanette Dutton helped with the Farewell party and represented the San Diego Epiphyllum Society. As you may notice there are several people from the above lists that are dual members.

Thank you all, I appreciate the work, your efforts made this a great convention.

San Diego shined thanks to all of you.

Sincerely Martin L. Mooney



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IT'S TIME!

by Ron Burnight

I see by the old cactus on the wall (I have a cactus calendar) that it's time to get ready for the Inter-City Show. Take it from a seasoned veteran who walked off with two points last year; readiness is all.

I don't want to discourage anybody, for after all, the pleasure is in the doing, but the truth is—this year, I have a lock on the Best of Show!! Guess I'm just readier than most.

It all came about last winter as I was sorting the treasures in my garage for a yard sale. I discovered this lawn jockey that friends had suggested I get rid of before the NAACP cut my lawn shorter than I wanted it. Now, I did not know what the National Aeronautics Association for Civilian Pilots had to do with lawn jockeys, but I'm easy to get along with so I put it up. I was about to place it in the "for sale" box when I bumped it against my motorized grocery cart and it made a "thok" sound.

Now, a thok sound can mean only one thing: it's hollow. I know this because my Dad had a wooden leg and he used to knock his pipe out on it, and when he did it made a thok, thok, thok sound which drove my mother nuts because every time he did it, she answered the door.

Anyway, as soon as I realized it was hollow, I was inspired. If I cut it in half and then sliced the top of the head off, it would make a perfect planter. Then serendipity struck. I realized that with that cute little jockey coat, if I painted the face pink and planted a *Mammillaria plumosa* in the head so it looked like one of those old time wigs, the lawn jockey would look just like George Washington. So, I did, and it did.

Well, if George Washington isn't good enough for Best of Show, I don't know what is. Of course, one pup of the plumosa does hang down over his forehead like a curl, which makes him look sort of effeminate, but that seems kind of popular nowadays. Maybe I could have him in front of a closet. I can hardly wait until the judges get an eyeful of ol' George.

See you at the show.

(Editors note: Thank you Joe & Carol Wujcik, editors of *The Inter-City Cactus & Succulent Pre-Show 1997 Newsletter*, for allowing us to "borrow" another terrific article by Ron Burnight of Pahrump, Nevada. And even better news: Ron has sent us a fresh-off-the-Undeerwood "Area 51" tall cactus tale!! We look forward to publishing it in our September issue.

You can meet Ron at the Inter-City Show and thank him in person for his delightfully entertaining articles. In addition to entering some very fine desert grown plants, he will be in the sales area offering up some especially hard-to-find seedling cacti (i.e. *Pediocactus*), and he will be giving a talk on taxonomy at 2:00 pm on Saturday, August 16th. Thank you Mr. Pahrump!)

BRAG TABLE WINNERS FOR JULY 1997: JUDGED BY TOM DEMERRITT

SUCCULENT:	FIRST PLACE:	Joe Quijada's <i>Orthophytum lemei</i>
	SECOND PLACE:	Alex Murphy's <i>Bombax ellipticum</i>
	THIRD PLACE:	Don Patterson's <i>Euphorbia tortirama</i>
CACTUS:	FIRST PLACE:	Don Patterson's <i>Parodia rubellahamata</i>
	SECOND PLACE:	Joe Quijada's <i>Copiapoa tenuissima</i>
	THIRD PLACE:	Don Patterson's <i>Sulcorebutia kruegeri</i>

Cacti of the Month: **Small, Tiny, Diminutive**

A Not-So-Tall Out-of-this-World Tale

by Edward DeLollis

After breakfast one morning in August, Edmund DeLow swallowed his pride, climbed into his full-sized pickup truck and drove east toward the town of Mountainside. Ed was frustrated that plant sales at his "Mr. Big Stuff" Nursery had been very poor. At the big June show and sale only a handful of his large specimens had gone home with someone else. Most of the globular cactus vendors had had tremendous success—the average sized plant being about as big as a golf ball. DeLow had tried a last minute strategy of announcing he had some rare specimens from South Africa—always an important feature. When the people found out that he was talking about "Giant Bird of Paradise", they laughed him off the lot. Ed knew that he now had to alter his inventory, change his product mix—it was the '90's and downsize was the name of the game. This was his reason for a trip to Mountainside, to visit the expansive cactus and succulent nursery of Lucien Gumbol.

Lucien could do it all with succulents—produce seed, sprout them at a high rate and grow them flawlessly to fruition. Gumbol had once been a big member of the local cactus & succulent society until jealous rivals, or senility had caused him to withdraw to his secluded Mountainside nursery. Selling worldwide by catalog only proved quite successful. Gumbol had agreed to this visit only because he knew DeLow was desperate and would spend large sums of money.

DeLow climbed the mountain road, reached the summit and began the descent on the south side where the numerous greenhouses were nestled. He drove threw the open gate on to newly paved road between rows of modern automated greenhouses that would make most nurserymen green with envy. Gumbol was waiting on the steps of his office smoking his pipe in the morning sunshine as Ed parked. Lucien Gumbol and Edmund DeLow were known to be on occasion two of the rudest men in the county and when they shook hands it was with a great deal of self-control on both of their parts.

"I need your help Lucien."

"Don't worry Mr. DeLow, our nursery can provide you with the finest assortments of globular cactus and other succulents in the world—all in three inch pots and single stand, of course."

"I know that," said DeLow. "But I don't know much about small cactus, and if our nursery is going to sell and market I need to obtain the bulk of your knowledge on the subject in the bargain."

"Let's get started," Gumbol replied, as he lead the way through the heavy traffic of electric carts and numerous employees toward a 50,000 square foot greenhouse built into the side of the foothills. Once inside Gumbol gestured to a flat of identical globular gray green cactus with white tufts adorning their ribs. "Do you know what these are?" he said picking up a ping-pong ball size plant.

"Sure I do," replied DeLow. "These are *Astrophytum asterias*, the Super Kabuto."

"Not exactly," said Lucien "these are the culls. I'll show you Kabuto." Gumbol proceeded down the aisle among seemingly millions of cacti stopping at a flat of acorn sized asterias. Close examination revealed a distinct pattern of tufts which he explained was why these tiny acorns sold for five times as much as the ping-pong balls did.

That was the beginning of the tour in which Lucien showed Ed about twenty genera of diminutive cactus—all much prized by collectors world wide. He showed Ed a myriad of miniature mammillarias including: *Mammillaria anniana*, *Mammillaria blossfeldiana*, *Mammillaria glassii*, *Mammillaria nana* and *Mammillaria schwartzii*.

They saw *Rebutia heliosa* radiating sun-like clusters of silvery spines hiding bodies about 2cm in diameter—smaller than acorns! Long narrow tubed flowers were orange with yellow throats. Gumbol pointed out many clustering dwarfs from the genus *Sulcorebutia*.

Ed picked up a pot and asked, "Is this a cactus?" The elongated tubercles were about an inch and a half long, yet the entire plant was no more than three inches in diameter. This threw him off.

"Yes, it is a cactus," came Gumbol's reply. "Notice the wooly areoles? See the magenta flowers? The Gomez boys brought this back from central Mexico a few years back."

"It looks like an agave," said Ed.

"*Neogomesia agavoides*," explained Lucien (*Ariocarpus*).

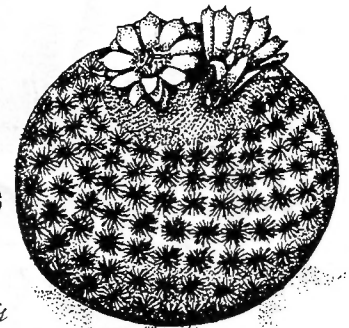
Another tiny spherical cactus caught Ed's eye; it was *Toumeyia klinkerianus*. Solitary, gray-green in color and without ribs or tubercles, the entire plant was no more than an inch in diameter, but with beautiful pink funnel flowers. According to Gumbol the flowers proved that these plants were at least five years old which explained their high price.

DeLow confessed that he had always liked *Ariocarpus*, but had never owned a good one. Gumbol showed him four miniatures that could be included in the \$10 each assortment: *Ariocarpus kotschoubeyanus*, *Ariocarpus retusus*, *Ariocarpus scaphirostris*, and *Ariocarpus trigonus*. He was particularly attracted to the striking coloration on the one with the long 'kotch...something' name; he ordered one thousand. He was also very impressed with the two inch wide rose pink flowers displayed on the $\frac{2}{3}$ of an inch body of a *Pygmaeocereus densiaculeatus* from Peru, and he ordered quantities of it as well.

When they reached the end of one wide aisle they took a freight elevator up to another level opening on a huge growing house that was kept cooler for some more mature stock. Edmund wiped some sweat from his brow and mentioned that his local club had had a fine talk and display on Escobarias from a newcomer who had shown some clustering specimens that he had owned for twenty years. Gumbol indicated that he might be willing to part with a few of his. They walked past some flats of what appeared to be peas; a closer look revealed the four ribs of *Frailea pygmaea* from Uruguay. These plants are rare because the flowers don't open, but there they were. In this shaded area there were clusters of *Frailea pumila*, some with pale yellow blooms. The plant bodies of *Frailea* seldom get larger than two inches in diameter. Ed recognized them as a favorite at the shows.

Small, Tiny, Diminutive

Epithelantha micromeris



Walking into a full sun area Gumbol showed Edmund one of his favorites, *Aztekium ritteri*. Its ribs and fissures created a unique texture olive-green in color. *Aztekium ritteri* bodies are about two inches thick, but sprout at the base forming compact groups.

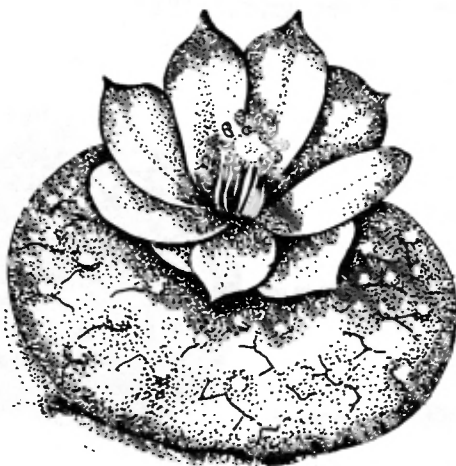
Also growing in full sun was *Ortegocactus macdougalii*. A grayish green body whose large rhomboid tubercles give character and are complimented by black spines that make it quite a ferocious creature for an inch and a half, that is!

Pelecyphora aselliformis occupied several benches. This small plant (about 2" X 2") features gray-green spirally arranged tubercles which are flat and laterally compressed. At their tips are numerous minute spines arranged like a comb. Nearby were flats of a plant endemic to southwestern U.S.A.: *Pediocactus knowltonii*, the "Thimble Plains Cactus", which can withstand a freeze if kept dry. Their dark green bodies are adorned with white areoles and are about one inch thick and outstanding when in bloom.

Lucien Gumbol led the way into another section that contained *Epithelantha micromeris*. These whitish finely spined globes of about two inches were being selected by some workers who were sorting by picking out the pots where the plants had started to cluster.

Then Gumbol took Ed into a small office where a pot of coffee was brewing; he poured two cups; then reached into a lower desk drawer and pulled out a bottle of Wild Turkey adding a healthy swig to each cup; cream or sugar was not offered. A large picture window looked down on a gigantic packing shed and loading dock where several tractor trailers were being filled with this living merchandise. Edmund DeLow realized that not only were these small cactus sentient beings, but it seemed like a tiny heart was beating inside every one of them. He glanced at the opposite side of the packing area where a crew was loading carefully boxed cactus into an elliptical metallic pod that was easily five times larger than any of the trailers. Some of the men wore bright green uniforms—a shade of green that Ed had never seen before. Gumbol caught his attention and insisted that they view a few more varieties.

At yet another greenhouse Gumbol showed off some mature specimens of *Discocactus horstii* from Brazil. Although only about two inches in diameter the purplish black body has about 20 ribs covered with white felted areoles which make a stunning contrast. All of these cactus are very slow growing and this adds to the expense. "But," Gumbol continued, "collectors can buy four or five distinctly different forms of a plant like *Echinocereus pulchellus* to keep their interest and curiosity levels high."



Blossfeldia liliputana

Botanical (Latin & Greek) terms for small:

dwarf: *nanus, pumilus.*

little: *parvus, minutus;*

very little: *minimus;*

extremely little: *minutissimus.*

nan-, nann-, nano-, nanno-: (Greek) dwarf.

also **nanandrus:** nanandrous

small: *parvus, pusillus.*

very small: *parvulus, perparvus.*

extremely small: *minimus.*

tiny: *minutus;* cf. LILLIPUTANUS.

A Not-So-Tall Out-of-this-World Tale

A foreman bragged to DeLow that they did a good job of growing *Turbinocarpus*. He proudly showed him *Turbinocarpus laui*, *Turbinocarpus lophophoroides*, *Turbinocarpus pseudomacrochele*, and the cultivar, *Turbinocarpus laui* "Old Baldy", none of which get any larger the one inch in diameter.

"Speaking of Lau," volunteered Gumbol, "we even have a miniature *Copiapoa*."

"You do?" said Ed.

"Yes, *Copiapoa laui* (Lau 891). It's only half an inch in diameter with twenty ribs spirally arranged and tuberculate on a brown globes. See the white wooly areoles—they make this plant a gem in any collection, especially when it forms a nice clump," finished Gumbol.

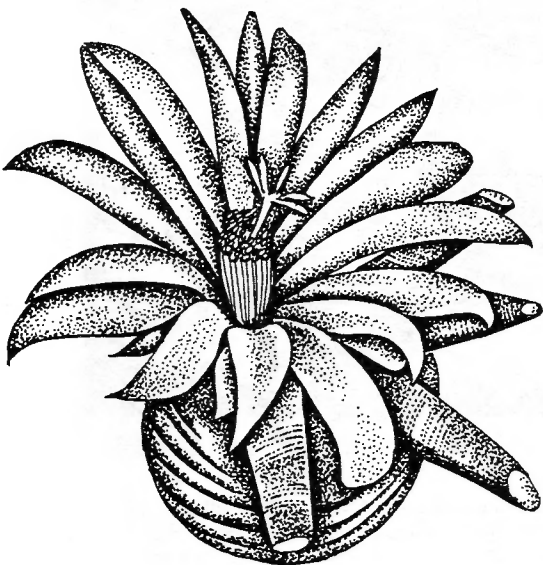
"Is *Copiapoa laui* your favorite?" DeLow asked.

"Yes, it is one of them," answered Gumbol who was now really enjoying giving this lecture to Ed DeLow. Continuing he said, "Let me take you to the house where I keep the blossfeldias, the smallest of all cactus—rarely exceeding half an inch. We often offer them as a graft. That way they are slightly larger and cluster more freely." Inside this smaller slightly shaded chamber the two men viewed pots of *Blossfeldia liliputiana*, bluish-green clusters with not visible rib or tubercle formation but whose tiny white areoles are spirally arranged. Many of the plants displayed half inch creamy white flowers in the midday sun.

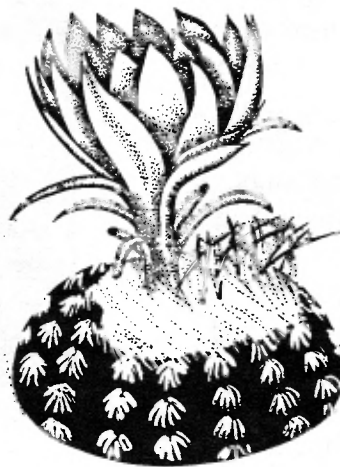
The two nurserymen returned to Gumbol's office and while finishing off the bottle of Wild Turkey they worked out a series of \$10,000 standing orders to cover the next six months. Gumbol wished DeLow a warm farewell; DeLow headed for the parking lot and got into his pick-up. As Edmund drove the windy road to the summit he was full of ideas and positively inspired by what he had seen at Gumbol's Nursery that day. As he reached the peak a large shadow blocked the sunlight momentarily. He looked up into the sky and saw the elliptical metallic pod fly off silently to the west. Quickly it was gone—invisible. Edmund DeLow realized that if these tiny cacti were this popular on another planet, he would surely have no difficulty selling them here on earth, where they were at home and where he lived a remarkable life.

THE END

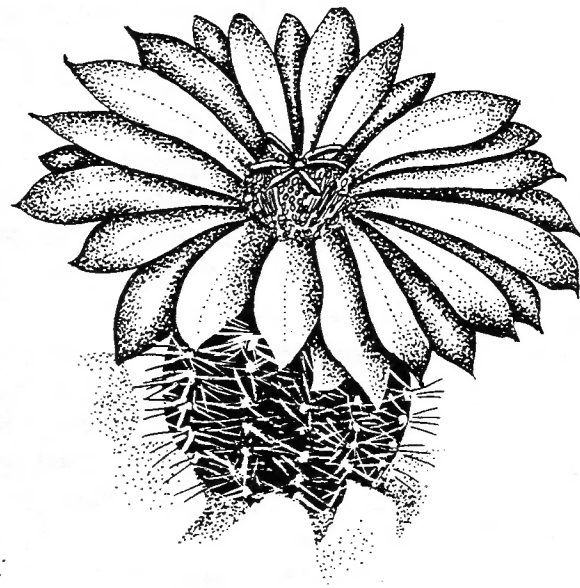
Illustrations used in this article are by Margaret Hodgson and were taken from LETTS GUIDE TO CACTI OF THE WORLD by Brian Lamb; 1991, Charles Letts & Co Ltd, London.



Neogomesia agavioides



Discocactus horstii



Frailea pygmaea

SUCCULENT OF THE MONTH: SEDUMS

BY VIRGINIA MAPLES INNIS

South of Eureka, California lies the small town of Ferndale. The short Main Street beckons tourists with before-the-turn-of-the-Century stores. The residential district closes in around the stores with many well-preserved gala painted Victorian homes. Gardens in unison with the houses reflect the designs of former times. One house possessed an especially fine garden of borders and beds, despite the fact that the summer bloomers were gone. This garden presented a riot of color; purple flowers were in drifts three feet high and three feet wide; brilliant butterflies fluttered about. This is a memory twenty-five years old—a recollection of sheer beauty.

My "Hello" to the gentleman in the garden got our family an introduction. This home owner/horticulturist had built and designed this garden. He offered us cuttings, and identified the purple mass of flowers as "Autumn Joy", *Sedum telephium*.

Now I owned a few sedums—small miniature succulents with star-shaped flowers, but the sedums in this garden were tall herbaceous shrubs. The abundant flowers of *Sedum telephium* have a dense cyme presentation. The notched or toothed blue-green leaves grow underneath the flowers. Leaves get larger and differ in appearance at the base of the plant; these leaves are amongst the largest for any sedum species.

"Autumn Joy" appeared in Europe in 1955 as a garden cultivar commonly referred to as '*Herbstreude*'. Since then, this handsome easy to grow plant has become popular around the world. Its blooms, whether fresh or dry, are prized by flower arrangers. For all its good qualities, this sedum is used in parks, public gardens and is likely to be seen many places. Toward the end of summer, these plants full of promising color-tinged buds appear in the markets, usually in the gallon size. Although it can be an

attractive potted plant, this sedum will never have the vibrant color and vigor unless it is grown in the garden.

"Autumn Joy" is frequently confused with *Sedum spectabile*, as they both have purple blooms during the same time of year. Some common cultivar from *Sedum spectabile* are:

'Brilliant' - This cultivar appeared in the USA in the early 1900's. Flowers are light - bright purple.

'Carmen' and 'Meteor' - Have dark rich purple flowers.

'Septemberglut' - Found in Europe; flowers have dark umbels.

'Snow Queen' and 'Stardust' - Both have white flowers.



Sedum telephium, like *Sedum spectabile*, has tiny flowers, but their massing together in corymbs makes them more conspicuous and a landing stage for a great diversity of insects. From *The Illustrated Encyclopedia of Succulents* by Gordon Rowley, 1978 Salamander Books, London.



Sedum rubrotinctum

Small shrub 25cm high; numerous stems branching from base; light green leaves with red tips 1-2cm long and round in section crowded along stems; pale yellow flowers. Known in cultivation in Mexico.

Due to their prolific nature sedums can be found in many garden flower beds and borders. They occupy our dish gardens and they star in our rock gardens. These sun-loving drought resistant plants provide tremendous texture, fantastic color, and bewitching forms. Many succulent lovers would be unhappy without their Pork & Beans, Donkey's Tails, and Orphines.

Sedums teach us that plants need not be expensive, ostentatious, or even difficult to grow, in order to be appreciated by the grower/hobbyist. They add charm to many a garden and contribute beauty and diversity to many a succulent collection. As with most genera, there are some species which are not only rare, but also expensive and difficult to grow!

The two most recent editions of Sunset's Western Garden Book each carry 23 entries for the genus *Sedum*. This is adequate for identifying the most common of the commercially available species. Ray Stephenson's book, Sedum Cultivated Stonecrops, tells of around 400 different stonecrops, and the English author claims to have 800 species, subspecies, varieties, hybrids, and cultivars in his own collection.



Sedum spectabile

Stems 30-50cm high; light green, oval leaves 7-8cm long and 5cm wide; pink flowers. SUCCULENTS THE ILLUSTRATED DICTIONARY by M. Sajeva & M. Costanzo, 1994 Timber Press.

Sedums come from many countries and continents with a wide variety of forms. *Sedum spectabile* originated in Korea and China. Several other species are said to have come from Europe. Since the stem cuttings can stay alive for weeks maybe months, and because primitive man used sedums for their medicinal and magical powers, man should probably be credited with the wide distribution of this genus. Additionally, sedums are known to have been in cultivation for several hundred years. For these reasons the locations of the natural habitats for many sedum species will probably remain a mystery.

Sedums, commonly thought of as very small plants, are among the most hardy. Although many sedums are miniatures, there are small, medium, and even species which are large enough to be considered shrubs, like *Sedum telephium*. Some look like tiny beans growing on a stem, such as the colorful *Sedum x rubrotinctum* "cherry red" or "aurora" which is a pearl pink. Others like *Sedum clavatum* and *Sedum suaveolens* have a rosette form. *Sedum frutescens* is a "tree" sedum that grows three feet high. With small deciduous leaves and beautiful papery bark when mature, it makes a great bonsai specimen. *Sedum frutescens* in native habitat grows out of the lava fields of central Mexico.

Some sedums have tooth shaped leaves that overlap on their stem and becomes a rope-like form, such as *Sedum morganianum* commonly called "Donkey's Tail". A smaller more compact version *Sedum 'Burrito'*, commonly referred to as "Baby Burro's Tail" does not grow as long but stays together much better. Both of these sedums are available as trailing basket plants at many nurseries.

Flower forms also vary. Many have single star-shaped flowers; others have multiple star-shaped flowers on a spike. Still more, like *Sedum telephium* "Autumn Joy" and *Sedum spectabile* produce a mass head of flowers, the inflorescence, on a stem called a cyme.

Most of Sunset's list of sedums are recommended ground covers. This seems a contradiction, as most sedums bruise easily, come apart readily, and cannot bear any foot traffic. It should be stated that sedums provide excellent ground cover within garden beds and borders, but should not be grown in (or take the place of) stepping stones, lawn, bark, gravel, or cobblestone walkways. Sedums provide great "filler" in garden areas and borders. Generally gardeners prefer to use only one species to an area. Once established these plantings will need little maintenance and they can add excellent color and texture.

Sedum anglicum, a dainty low-spreading plant of two to four inches, is a typical groundcover sedum. It is referred to as a carpeting species, and although it has been popular and commercially available for a long time, I have found that it is not particularly easy! Perhaps this is an effect of inadequate drainage. This species is a lover of damp—not saturated soil.

Known as "English Stonecrop", *Sedum anglicum* grows all over western Europe, from Scandinavia to Iberia; mostly on coastal sites with high precipitation. There is a tiny compact form, *Sedum anglicum* var. *minus*, throughout the British Isles. This variety from the Inner Hebrides is dark green in color, while the same plant from Cornwall is slightly larger and bright green.

Despite its common name, the smallest form of *Sedum anglicum* comes from Mount Ventous, France: *Sedum anglicum* var. *hibernicum*. Ireland grows a downy form, and the coastal plains of Portugal produce a variety that can grow seven inches tall.

In medieval times *Sedum anglicum* was cultivated for its medicinal properties, which perhaps insured its survival. It could always be found around religious compounds and in the herbalist's and healer's gardens. Among the list of uses and cures: fevers, cankers, fretting sores, and to stop internal and external bleeding. Roman apothecaries realized that sedum used as a medicinal tasted bitter when the plant was harvested in the morning. They ordered that it be gathered late in the day; this produced a more palatable cure.

Recently, I chanced upon three flats of *Sedum anglicum* "ground cover" at a local nursery. Two of these flats had been in partial protection under shade screen; they received plenty of heat/light and their appearance corresponded to their botanical description. The third flat had been placed under a table and had not received nearly as much light. Plants in this flat did not look like the same species. Sun deprivation had created etiolated spindly pale plants. Most sedums, most succulents for that matter, do not do well in a fully shaded area.

The genus *Sedum* is in the *Crassulaceae* family, along with *Adromischus*, *Aeonium*, *Cotyledon*, *Crassula*, *Echeveria*, *Dudleya*, *Graptopetalum*, *Kalanchoe*, and *Sempervivum*, and others. Most sedums are Crassulacean Acid Metabolism — **CAM Plants**. It was first noticed that plants in the *Crassulaceae* family have evolved in a special way to avoid transpiration, the plant equivalent of perspiration. Non-CAM plants breathe through their stomata during the day by using the sun's energy to convert carbon dioxide into sugars. This process is called photosynthesis. Plants that use this process require much water during the heat of the day.

CAM plants avoid this water loss through a different from of photosynthesis in which fewer stomata open during the day to take in carbon dioxide. Keeping stoma closed during the heat of the day cuts down on transpiration. Carbon dioxide is taken in at night and stored in the form of malic acid. The next day CAM plants use the sun's energy to convert malic acid into sugar. The trigger to CAM process is not light, but temperature change. Because of this need, sedums require a marked difference between the day and night temperatures in order to function efficiently.

The Roman apothecary tasted the sedum's bitter malic acid in the morning. This bitterness dissipated as the malic acid turned to sugar during the day.

Sedums will grow in almost any medium as long as you provide them with good drainage. My personal recipe for sedum potting soil: 10% sand and/or gravel, 20% vermiculite, 70% commercial cactus & succulent Mix. Avoid potting mixes and soil amendments that contain peat. In the garden it may be beneficial to add crushed rock or gravel to your soil for drainage purposes. A top dressing of the same medium can also help the plants keep moist but not continually wet. A good top soil and occasional fertilization will produce better plants and flowers.

Propagation can be by cuttings, seed, or plant divisions. With many sedums it is possible to root from a single leaf, although a stem will help you achieve a larger plant sooner than rooting a leaf. To root from cuttings, place them in a dry porous mix sheltered from the sun; give the cuttings a chance to heal by waiting a week or two before you water the mix; after watering the porous soil mix, mist the plants once a week—more often in a very warm situation. Cuttings should be rooted within three weeks. Spring rooted cuttings will not bloom the first fall. Root division propagation usually gives flowers sooner. It is said that root divisions also benefit from a dry-out period before being replanted.

Most nurseries are quite limited in sedum offerings. You must look to the nurseries that cater to the collector and hobbyist to find about 90% of the species and varieties that exist. Our own San Diego Cactus & Succulent Society has expanded my own collection tremendously. Via the sales table, the benefit drawings, the September picnic & auction, field trips to the Huntington Botanical Gardens, the exchange table, and the Christmas plant exchange I have observed and obtained a large variety of species and cultivars. And there are always generous fellow members like **Bob Taylor**, **Marylyn Henderson** and **Alex Murphy** who will pinch off a cutting to share with you!!!

References: Ray Stephenson, *Sedum Cultivated Stonecrops*, 1994, Timber Press, OR.

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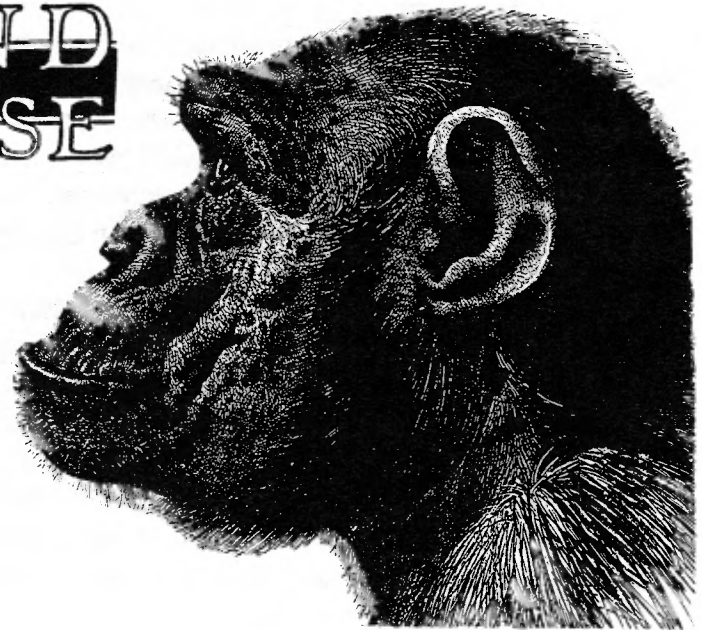
WISE AND OTHERWISE

By Michael Buckner

FUNDAMENTALS

After completion
Come new beginnings.
To gain strength,
Renew the root.

— *Deng Ming-Dao*



I climbed red sandstone and felt beneath
my feet—smoothness and fire.
Here and there pitted and scarred it lay
like a great open heart.

JANE MILNER from a poem about Bryce Canyon
(and dedicated to Ed Nolan)

"The rapid growth of human populations, extensive poverty, and ignorance of ecological principals that are causing the destruction of the tropical rain forest during our lifetimes promise to drive to extinction something approaching a quarter of the world's biological diversity before our grandchildren have the chance to learn about it."

Peter Raven, Botanist, "What the Fate of the Rain Forests Means to Us", in the Cassandra Conference, edited by Paul Ehrlich, Texas University Press, 1988.

Final Listing Rules: Cactus Ferruginous Pygmy-owl (*Glaucidium brasilianum cactorum*)
The Arizona population of this small, formerly-abundant bird was listed on March 10, 1997 as endangered. Cactus ferruginous pygmy-owls once occurred in large numbers in streamside thickets, woodlands, thornscrub, and desert scrub habitats in central and southern Arizona, and they were common throughout the southern tip of Texas through northern Mexico. But widespread and severe loss of streamside habitats in Arizona, which constituted the main portion of the bird's U.S. range, reduced the State's known pygmy-owl population to a mere 19 individuals by 1996. Three of the owls live on Organ Pipe National Monument along the Mexican border, and the other 16 survive on private lands in the Tucson area. The FWS will offer landowners assistance in designing Habitat Conservation Plans to protect the birds while allowing compatible land uses to proceed. The FWS decided not to list the Texas pygmy-owl population, which is not facing imminent threats to its habitat.

The Skeletons of Dreams

He found giants
in the earth: Mastodon,
Mylodon, thigh bone
like tree trunks, Megatherium, skulls
big as boulders—once,
in this savage country, treetops
trembled at their passing.
But their passing was silent as snails,
silent as rabbits: nothing at all recorded
the day when the last of them came
crashing through creepers and ferns,
shaking the earth a final time,
leaving behind them crickets,
monkeys, and mice.
For think: at last it is nothing
to be a giant—the dream
of an ending haunts tortoise and Toxodon,
troubles the sleep of the woodchuck
and the bear.

Back home in his English garden,
Darwin paused in his pacing,
writing it down in italics
in the book at the back of his mind:
*When a species has vanished
from the face of the earth,
the same form never reappears . . .*
So after our millions of years
of inventing a thumb and a cortex,
and after the long pain
of writing our clumsy epic,
we know we are mortal as mammoths,
we know the last lines of our poem.
And somewhere in curving space
beyond our constellations,
nebulae burn in their universal law:
nothing out there ever knew
that on one sky-blue planet
we dreamed that terrible dream.
Blazing along through back nothing
to nowhere at all, Mastodons of heaven,
the stars do not need our small ruin.

Philip Appleman, DARWIN'S ARK. 1984, Indiana Univ. Press

The recent arrest of foreign cactus and succulent researchers in Mexico is a further example of the current catastrophic (or at least highly unsatisfactory) situation regarding field study there.

It's a fact that Mexico has applied her laws to the letter in order to make examples of these cactophile "criminals", despite the fact that these people have been involved in legitimate study and cultivation of these plants for more than 30 years. How else could it be that large quantities of material produced in cultivation are available from nurseries outside of Mexico? . . .

The reported destruction of Mexico's native flora through field study and commercial exploitation—a subject so often discussed in all well-known journals—is in fact minimal when compared to the very destructive impact of the indigenous population through the building of roads and pipelines, the encroachment of agriculture, expansion of settlements, etc. . . . most species are mainly destroyed by the inhabitants, not collectors, but it is easy to control collecting as compared to going out into the countryside and throwing angry squatters (voters!) and keeping them off while they starve! It is also well-known that the economic return on the cleared land is hundreds of times less than the value of that which was destroyed.

A further, related effect is that the freedom and incentive to study are severely reduced, especially when new descriptions by foreigners are dismissed out of hand if the relevant herbarium material is deposited in an institution outside of Mexico. Reference to the appropriate literature reveals that current practice does not require herbarium material to be deposited in the country of origin of new discoveries, so that steps can be taken to assess and protect. The desire to protect endangered flora and fauna is, of course, totally commendable, but care must be taken. The way the Mexicans are interpreting and applying their national laws at present only serves to deter study, especially by up-and-coming researchers (some of whom have already been unfairly labeled as criminals in the press). This builds a sorry picture for the future of botanical study and thus, ultimately, conservation. Those who are willing to work in the field under such circumstances deserve our praise. Perhaps through constructive discussion and negotiation, the Mexican authorities could be persuaded to take a step forward in this area by, e.g., allowing adequate quantities of seed to be legally collected and placed at the disposal of responsible organizations or individuals abroad.

Excerpt from *Letter to the Editor* by Fritz Hochstätter (translated by Chris Holland) *CSSA JOURNAL*, Vol.69#4 (Jul-Aug 1997)

What happens to the hole when the cheese is gone?

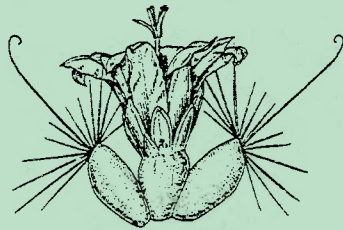
BERTOLT BRECHT, Western koan

Thank you! Karen Wilson!!

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