

MAMMILLARIA THORNERI

good fun ! Espinass y Flores

NEWSLETTER OF THE SAN DIEGO CACTUS & SUCCULENT SOCIETY

Affiliate of the Cactus and Succulent Society of America, Inc.

VOLUME XXXI NUMBER TWELVE, SATURDAY, DECEMBER 14, 1996 @ NOON



*Season's
Greetings*

★ ☆ ✨ **December Holiday Meeting starts at Noon** ✨ ☆ ★

Our holiday meeting is very special, tremendous fun, and should not to be missed — even if you just recently joined our society — don't feel you know enough people — or are still intimidated by the plants and their seemingly unspeakable names (*unpronounceable, maybe, but unspeakable? . . . well, maybe a few!*). The food is delicious. Top Hat Caterers of Lemon Grove has been serving us for the past ten years. And the price is excellent (*\$10 per person*); the club actually loses money on this one, in festive government fashion!

Additionally, all members who have paid their dues **through 1997** receive an excellent gift plant by random drawing (*feeling lucky?*) which goes on as our dinner is being served and eaten. And at the beginning of the meeting we have our Holiday Gift Exchange — this is how it works:

Any member, or guest of member, may participate; all you do is bring in a healthy, happy, desirable cactus or succulent. (*Occasionally, someone brings in a creative succulent related item - I am the proud owner of a Virginia Innes "No Water Ever Necessary Cloth Cactus" that I obtained at one of these exchanges many years ago.*) Gift should have a label that identifies plant and your name. If you don't have any plants you want to part with — go out and buy one! Participate! it's fun!! The first plant to be selected will be auctioned off at the end of the meeting, and the person who brought in that plant gets first choice of all the gifts on the table. Whenever a plant is selected, the person who brought it gets the next choice. The more appealing the gift that you bring in is, the earlier you will get your chance at the many fine specimens our members have brought in. This is a terrific way to give, receive, and broaden your plant collection. So look through your collection and find that special December gift!

Ask any "old timer" — they will tell you of the friends they made, way-back-when at the Holiday party of '76 — or about all the ribbons they have received on a plant they picked up at the '81 gift exchange. Please partake of the festive holiday comradery. See you there, with bells on . . .

Michael & Joyce Buckner

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

(619) 222-3216 FAX OR PHONE

CHRISTMAS ON THE PRADO

DECEMBER 6th & 7th 1996
5:00 PM to 9:00 PM

Come start the holiday season
by joining in the fun
at this annual event
all through Balboa Park
Decorated museums, food, dancing,
singing, merriment for
all ethnic and national and religious events
celebrated at the end of the year

PUBLICATION DEADLINE IS THE 20th of the prior month.

Espinas y Flores is the newsletter for the San Diego Cactus & Succulent Society, a non-profit corporation. It is published monthly with the exception of a combined May-June issue (11 issues per year). 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 that 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.

Papa Buckner (Warren Buckner) just called me. He was reading the obituaries in the Sunday paper. "When I can't find my name in there — I know I'm still alive," he says. Then he tells me the sad news: **Ruth Richardson** has past away — no other details are given. Coincidentally, I had telephoned her home many times this Sunday. Encouraged by a busy signal on my initial attempt, I dialed many more times throughout the afternoon — no answer . . . no answering machine. It just wasn't like Ruth not to contact us to pick up the plants as she had done the past several years.

Ruth was always a very positive person. Never once did I hear her complain of health problems or other woes. She was often the blessed soul who would approach us when we were feeling totally overburdened with responsibilities, and she would say, "How can I help?" . . . or "What do you want me to do?" . . . or "What should I bring?"

Ruth saved us one June morning, when we discovered that no one had planned or brought a thing for the judges to drink and snack on before they began the work of judging our rather large show. Elinor Latimer had performed this function for so many years; everyone had forgotten assign this job to someone new. Now, many of these judges had gotten up very early and traveled a considerable distance — they were definitely expecting coffee and donuts, at least! All the clerks, tabulators, etc. were extremely relieved when Ruth came back at about 10:00 am with orange juice, milk, muffins, donuts and fruit. And it did wonders for the judge's dispositions.

I will miss seeing Ruth at the meetings; she gave me a pair of Christmas earrings that she had constructed at the October meeting — I will be wearing them to the Holiday Banquet. And I will find a way to make sure that all the plants SDC&SS members contributed to the Disabled Veterans get there — in her name. My heart-felt sympathy goes out to her husband, Francis.

Sincerely, *Joyce Buckner*

We are glad to hear that **Wilbur Glover** was well enough to drive himself from New Jersey to his winter home in Florida. We understand that he still will need much more time to completely heal and we hope he gets to feeling better everyday.

January 9 - Plant Sex — Pat Flanagan, SDNHM Director of Education and Jon Rebman Ph.D., Curator of Botany; begins at 7:00pm in the Auditorium of the SD Museum of Natural History in Balboa Park. \$5 SDNHM members; \$7 non-members. Contact the Education Dept. (619) 232-3821, ext 203.

The San Diego Cactus & Succulent Society, Inc. invites commercial advertising for publication in *Espinas y Flores*. In order to conform with Postal regulations regarding non-profit bulk mailing, all advertising must be related to the functions of this Society (*education about and the propagation of cacti & succulents*). This newsletter has a circulation of approximately 270 copies to members. Additionally, some 40 - 50 copies are mailed to educational institutions, botanical societies, cactus & succulent nurseries, and some CSSA board members. Whenever possible, copies are made available to the general public should they attend a SDC&SS meeting, and extra copies of the May-June Show issue are always printed and provided to interested parties.

The San Diego Cactus & Succulent Society encourages the propagation and culture of succulent plants and their conservation. In order to promote these goals, the society will not allow the sale of field collected plants at our general meetings, nor at the June sale; all advertisers are expected to follow this policy. Education is also one of the society's most important goals. The SDC&SS has a very extensive and outstanding library. A majority of our members regularly invest in botanical books to increase their knowledge and enjoyment of this hobby.

The deadline for all ads with camera-ready copy is the 10th of the month prior to issue. We invite your inquiry for advertising rates, which are based on size and number of insertions.

Please contact: Herb Stern (619) 223-9124.



Nominations for 1997-1998 San Diego Cactus & Succulent Society Officers:

President	—	Thomas Knapik
Vice President	—	Tom DeMerritt
Secretary	—	Beverly Kirkegaard
Treasurer	—	Herb Stern

**BRAG TABLE WINNERS FOR NOVEMBER 1996:
JUDGED BY DOROTHY BYER (SUCCULENTS) AND PHYLLIS FLECHSIG (CACTUS)**

CACTUS:	FIRST PLACE:	Don Patterson's <i>Ariocarpus retusus</i>
	SECOND PLACE:	Kelly Griffin's <i>Astrophytum myriostigma</i>
	THIRD PLACE:	Don Patterson's <i>Cochemia pondii</i>
SUCCULENT:	FIRST PLACE:	Phyllis Flechsig's <i>Lithops bella</i>
	SECOND PLACE:	Shirley Berry's <i>Haworthia viscosa</i>
	THIRD PLACE:	Don Patterson's <i>Tylecodon species</i>

Still Surprised You Actually Won?

We had an excellent table of plants which resulted in an excellent number of participants. The SDC&S Society's treasury increased by \$103! Having the drawing after the refreshment break seemed to be a big hit, don't you think?

Many ***Thank yous*** to the following donors:

Carol Jean Wolcott - *Euphorbia milii*; Rennie O'Connell - *Echeveria "Rumpled Queen"*; Bruce Edward - *Kalanchoe "Purple Scallops"*; Shirley Berry - *Opuntia aculeata*; and Betty Athy - *Dudleya brittonii, Fockea edulis* and *Mammillaria geminispinia*.

Next Benefit Drawing will be at the January 1997 meeting. Please telephone Betty Athy @ (619) 469-7647 if you have any beautiful specimens you might wish to donate. Betty scours the earth for exciting plants for our Benefit Table and she welcomes your contributions.

Many thanks to all of you for supporting this program.

. . . Thanks, Kay Quijada




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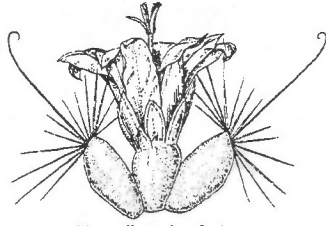
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Mammillaria thornberi

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PRESIDENT'S MESSAGE FOR DECEMBER 1996

Our Holiday meeting and dinner will be held on Saturday, December 14, starting at noon. Everyone is welcome to attend, though the cost of the dinner is \$10.00 for each person. Please pay in advance, and reserve a spot; those that need assistance in paying please contact a society board member and we will help. Send in your checks for the dinner to our P. O. Box as soon as possible. If you want a Gift Plant, please pay your 1997 dues before the December meeting as well. You do not have to purchase a dinner to come to the meeting and pick up your plant. Also, advance due's payment is NOT required to attend the meeting. If you sent in your dues or paid for dinner and mailed it to the P. O. Box after Saturday, December 7, please call me.

Please check in for the dinner and pick up your ballots as soon as you come in the door. Voting for officers will start at about 12:30, if you are a member it is important to attend the meeting and cast your vote for the 1997/98 officers. Also, new life memberships will be awarded. Dinner will be served at around 1:00 p.m., the Plant Exchange will start when the voting begins and continue while we eat. The Gift Plant drawings will start at about 1:30 and the plant auction will begin after the last ticket is drawn.

The Plant Exchange program will work as usual. Anyone may participate by bringing in a nice plant to give away. The best plants are picked first, several members have received plants that were award winners at our annual show. Gift Plants are available to members that have paid their dues in advance. Tickets will be available at the meeting, we will draw and call numbers as usual. You must be present to receive your gift plant.

In this issue you will notice that we have started to advertise cactus and succulent related businesses. The board is trying to offset some of the costs for our newsletter by accepting advertisers. If you are interested in advertising here, please contact Herb Stern or me.

I hope that you will take a look at the very back of this newsletter. Under your mailing label you will see a black border around a lot of fine print. I wish that we could print this bigger, it represents many important people that make us the best Cactus and Succulent society. I hope that you can find your name in that print.

The people on that list, and those that help with our other annual events are the San Diego Cactus and Succulent Society's foundation. They give life, and their free time, to our club. Those of you that do not find your name on the back of the newsletter, here is a call for your assistance. Please volunteer your services. Next year we will need your help more than ever! Call up an officer or director and let them know that you would like to help.

Lastly, this is my final 'President's Message' to the society. You elected me two times in a row and I appreciate that very much. It has been an interesting four years as your President. I got a chance to make a difference and learn about people and politics. As President one is supposed to be impartial and fair, I took this seriously and did the best I could. Now, I am four years wiser and look forward to my tenure as Immediate Past President. I plan on being active in this society for years to come. I would like to thank you for having confidence in me.

Best Regards and Happy Holidays,

Sincerely,

Joey Betelov

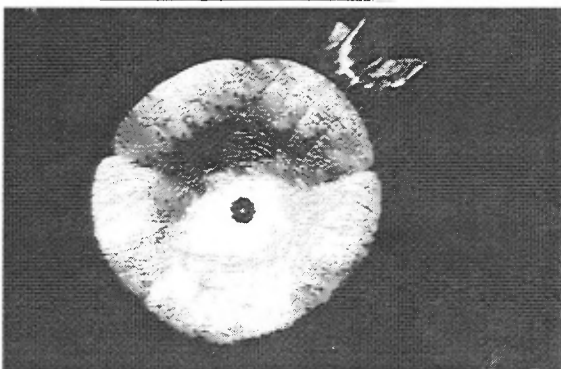
DESERT STARFISH - THE CARRION FLOWERS

BY ALAN WEISS

Growing in the harsh desert lands of South Africa and Namibia are many tall, cactus-like succulents of the stapeliad group, relatives of the common milkweed. Included in this family are the "bridal vine", or *Stephanotis*; the "wax vine", *Hoya*; and the "heart vine", *Ceropegia*.

Thirsty travelers finding these thorny plants probably would not have stopped to take botanical notice of the small, star-shaped flowers along the stems, or the slender seed pods which usually develop in pairs and attain a length of several inches. Like the early German botanist Dr. Rudolf Marloth (1855-1931), who described such an encounter with a stapeliad of the genus *Trichocaulon* [now *Hoodia*], these travelers undoubtedly would have noticed the plant's metallic-astringent flavor, with a definite touch of licorice, which may have left them completely free of thirst and hunger for as long as a day afterward!

But what are these "starfish flowers", also known as "carrion flowers", doing in the diamond-bearing deserts of Namaqualand, the Karroo, Keetmanshoop, Sendlings Drift, and other historical places in southern Africa, thousands of miles from their presumed place of origin in India? And how did they manage to travel this great distance?



Saucer-shaped blooms of *Hoodia gordonii* readily distinguish this genus from *Trichocaulon*, whose stems are similar in habit. Blackish corona rests in shallow tube at flower's center.

The answer lies within the paired seedpods which are typical of this group, the *Asclepiadaceae*. Each pod, when ripe, dehisces (splits open) to release up to several hundred small seeds, each attached to a tuft of silky hairs. Even a barely perceptible breeze will carry these seeds, resembling those of milkweeds, on their long colonizing journey.

From their home in India where *Caralluma frerei* — the only stapeliad with leaves — was found, they have spread westward to the Arabian peninsula, and eventually to the entire African continent, their conquests limited only by the Canary Islands and southern Spain to the west and north, and by Madagascar to the east.

As the descendants of *Caralluma frerei* migrated into new habitats, they were confronted with the problem of adapting to extreme heat and drought, at which they have been spectacularly successful. Their leaves became reduced to very small scales, which still can be seen in *Stapelia nobilis* and others, or disappeared completely. The stems of *Stapelia* are slender and usually divided into four "ribs", often with prominent teeth along each rib replacing the leaves which have been lost. Others, such as *Hoodia*, may have 25 to 30 more-or-less irregular ribs, with single thorny points or tubercles along each rib, giving the plant the appearance of a cactus or succulent *Euphorbia*. Generally, the stems do not branch, except at the base, with a noteworthy exception being *Edithcolea grandis*, an East African species with irregularly branched stems; short, stout spines; and intricately decorated flowers sometimes likened to a richly-colored Persian carpet.

DESERT STARFISH by Alan Weiss continued

Indeed, the vivid purple-brown markings of these flowers, typically in concentric bars or spots against a light primrose background, may rival those of the most elegant Persian tapestry. Many, such as *Orbea ciliata* are highlighted by white or dark purple hairs which form a delicate fringe along the edges of the flower, and which move in the slightest breeze, possibly attracting insects.

But what insects could exist in the harsh deserts of Africa that might be attracted to such flowers? The answer may be inferred from another notable property of many (but not all) stapeliad flowers: a strong fetid smell. Thus, blowflies, attracted to the flowers by their bright markings, glistening raw-meat texture as seen in *Huernia vansonii*, movable hairs, and scent — all suggestive of carrion — actually lay their eggs on the flowers, and in so doing, inadvertently pollinate them. The eggs hatch, but the larvae soon starve.

It seems, at least in one instance, that of *Stapelia leendertziae*, that the more intense the colors are and the more strongly the flower is scented, the better it is able to attract pollinators. This particular flower is deeply bell-shaped, about four inches long, with short, narrow petals of rich brownish purple, almost black, with a velvet texture. The surprisingly offensive odor is almost strong enough to bowl over anyone who sniffs this flower, making it rather unlikely that one would wish to repeat such a foolhardy adventure. In contrast some flowers of *Piarranthus* are small and light yellow in color, or yellow peppered with reddish spots like tiny garnets. These lack the carrion odor, having a much less offensive smell, not unlike that of overripe fruit. These flowers may attract fruit flies.

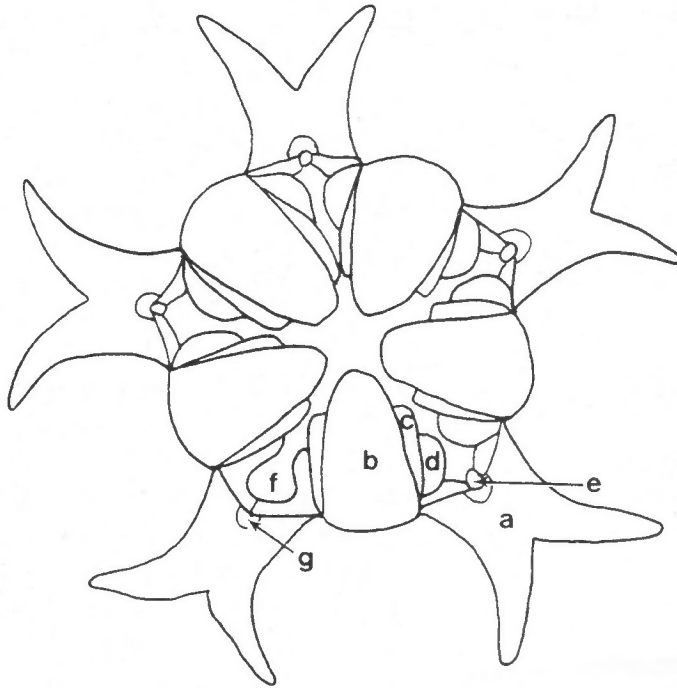
This triumphant mastery of their environment by stapeliads represents one of the greatest advances in the plant kingdom, comparable to the development of orchids.

Like orchids, the pollen of stapeliad flowers agglutinated into a waxy mass, or

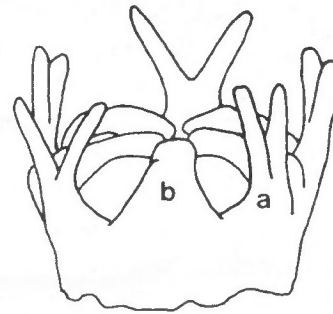
pollinium, of which there are ten in each flower (except for an occasional odd flower with four, six, or even more petals and a corresponding number of anthers). Thus, it is possible to transfer the greatest amount of genetic material in one compact, neat package. This, however, necessitates very precise placement of the pollen mass in a minute stigmatic cleft concealed beneath the anthers. The corona, part of the central stigmatic column (the gynostegium), surrounds the anthers and the stigmatic surface, which is not exposed as it is in most flowers. Complex projections of the corona in *Caralluma piarranthoides* form a barrier which allows only certain specific insects to reach the anthers and pollinate the flower. When a fly visits the flower, lured to the anthers by colors and smell, one of the pollen masses may detach and adhere to one of its legs.

Occasionally, a fly may be seen held fast to the column by one of its limbs; while the fly may eventually extricate itself, in doing so it will almost certainly pollinate the flower. The difficulty of achieving this precision can be appreciated by anyone who has attempted to hand-pollinate these flowers, especially the smaller ones. Consequently, there are probably very few man-made stapeliad hybrids.

After pollination, long seedpods develop, often in pairs. One or both pods may develop immediately after pollination; or they may remain immature for several months, ripening later when conditions are more favorable, thus helping to ensure the survival of the species. The seeds, detached from their buoyant silky wings, may remain viable for several years until adequate moisture is available for germination. Seeds of an imported *Trichocaulon officinale*, kept in my refrigerator for the last nine years, still germinate when planted! When, after such a long wait, germination does finally occur, it can be amazingly rapid — as little as 48 hours or less.



Corona of a stapeliad flower showing face (left) and oblique (below) views: a, outer lobe of corona; b, inner lobe of corona, covering anthers; c, outer margin of anther; d, pollinium (partially exposed); e, pollen carrier attached to pollinia; f, empty pollen chamber (pollinia and carrier removed by insect pollinator); g, opening of nectar gland. (Modified from Bruyns, 1983.)



In northern Africa, the prevalent stapeliads are *Caralluma*, *Echidnopsis*, a few very rare or extinct forms (*Pseudolithos*, *Whitesloanea*), and *Edithcolea* in Kenya. Nearly all of these are succulents having four-sided stems. South of Kenya the genus *Stapelia* begins to occur, many of which closely resemble *Caralluma*. At least one species, *Huernia somalica*, may have migrated northward from the south, where more than 40 species of this of this genus occur. The group achieves its greatest diversity in the southern half of the continent where six or seven genera with multiple-ribbed stems (8 to 30 ribs or more) occur.

One of the latter, *Hoodia*, may form large clumps of thorny stems with dozens of flowers. The petals are completely joined along their entire length, with only a tiny free lobe at the tip, forming a peculiar saucer-shaped flower. This necessitates folding of the flower bud into five radiating "wings" which separate when the flower opens, an event which may be accompanied with a slight but audible "pop". This shape, which may be

unique among flowering plants, is an extreme example of sympetaly, or the joining of the corolla lobes into a single structure. At the other extreme are *Piarranthus*, whose narrow petals are separate nearly to the center of the flower, and *Duvalia*, in which the petals may be folded lengthwise (replicated) to form a starlike flower with very narrow petals radiating symmetrically like the spokes of a wheel.

The largest stapeliads are the Trichocaulons [now in the genus *Hoodia*], with stems reported to be about five feet in height. The flowers, however, are invariably only about one-half inch (12 mm) or less. *Stapelia gigantea* has the largest flowers, which may be 14 inches (36 cm). *Caralluma retrospiciens* [now *Caralluma russliana*?], which occurs in Morocco, may have a dozen or more four-foot stems tipped with large umbels (clusters) of 60 or more blackish flowers in each umbel. Most stapeliads are much smaller, such as *Duvalia* and *Piarranthus*, whose clustered stems resemble small green potatoes.

DESERT STARFISH by Alan Weiss continued

One species, *Echidnopsis squamulata*, shows the extremes to which these plants will go to accommodate specific pollinators: the tiny bottle-shaped flower is swollen at the base and constricted to form a narrow neck tipped with minute petal lobes. The opening at the neck is only a millimeter or less in width, excluding all but the tiniest insects. Clearly, the best way to appreciate these flowers is with a good hand lens.

Among stapeliad fanciers, one of the most desired (and rarest!) is *Pseudolithos cubiformis*, a globose-stemmed stapeliad growing to four or five centimeters in height, a very obscurely four-angled, and densely covered with three-to-six sided raised scale-like tessellations. This gives it the appearance of the skin of a reptile (the Somali name for this species is "dinah", which means "tortoise"). The small flowers occur in umbels of up to 30 on the sides of the stems, which superficially resemble the widespread "Osage orange" found in many parts of the United States.

It may be purely academic to describe a species which few, if any, readers have ever seen. Unfortunately, it is not likely that any *Pseudolithos* will be seen, as they are virtually extinct in their natural habitat in Somalia, the result of their use by humans and animals for food (unlike many stapeliads, *Pseudolithos* is reported to be edible), and habitat destruction brought by human development. There may be no more than five or six plants in collections in the United States. When the late botanist Dr. P.R.O. Bally described this plant in 1959, he could not have foreseen its near demise today. Would he have described it, if he had known otherwise?

Evidently, the *Stapelieae* are a highly developed group and superbly adapted to their environment, representing a pinnacle of evolution among flowering plants. Unfortunately, this distinction of their beautiful flowers will not serve to protect them from human development, browsing cattle and goats, or excessive collecting by admirers, all problems threatening far too many species with danger of extinction today. Hopefully, their salvation may be their ability to exist in desert areas which we humans consider unsuitable for our own use.

* Author's note - 1996 update: *Quaqua*, *Notechidnopsis*, *Laurania*, *Tridentia* and other new genera should be included. *Trichocaulon* is likely to be revised or invalidated.

This article by San Diego Cactus & Succulent Society member, Alan Weiss, was reprinted with permission from the author; article originally published in EXPLORER - A MAGAZINE OF NATURAL SCIENCES, Summer 1985, volume 27 number 2, Wm. C. Baughman, Editor, copyright 1985 by The Cleveland Museum of Natural History.

Many of you know Alan Weiss, who often shares his wonderful succulent collection with us by showing these strange offerings on the Brag Table at our monthly meetings. Currently, Alan is an active member of both the San Diego and Palomar Cactus & Succulent Societies, as well as, the International Palm Society, the San Diego Orchid Society, Quail Botanical Gardens and the Huntington Library & Botanical Gardens.

Originally, Alan's article included many of his photographs and a couple of his sketches /illustrations — we were able to reproduce only a few of these due to space limitations. Here is what The Explorer had to say about Alan in 1985:

"Alan J. Weiss, a lifelong resident of Cleveland, Ohio, has been a member of the Cleveland Museum of Natural History since 1973. He has collected and photographed stapeliads and other succulents for over 18 years in a small greenhouse which he constructed.

While attending the University of Rochester, he discovered the city's Highland Park area, which contains a thousand or more lilacs and magnolias and has a cactus/succulent greenhouse. He visited the area frequently before graduating from the university in 1968 with a bachelor's degree in chemistry. Also, while attending Boston University, he was a frequent visitor to a cactus and succulent nursery located near the university. He was graduated from Boston University in 1972 with a master's degree in geology.

Weiss is an avid fossil collector and has donated several specimens to the Museum's paleontology collection. He recently presented a slide program on fossil identification to members of the Museum's Fossil Society. Other interests of Weiss include classical music, photography, and gemstone faceting."

Presently, Alan resides in San Marcos with four beautiful Tonkinese cats, a designer rat, a "brand new" 1959 Steinway piano, and a superb collection of palms, orchids, succulent and tropical plants. Alan is also an excellent potter /ceramist. We are hoping that the reprinting of this old article, will inspire him to write more articles on succulent plants for Espinas y Flores! Thank you Alan!



San Diego Natural History Museum

JON P. REBMAN, Ph.D.
Curator of Botany

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Michael & Joyce Buckner, editors
S.D. Cactus & Succulent Society
4822 Santa Monica Avenue, #103
San Diego, CA 92107

Dear Michael & Joyce:

November 18, 1996

I read the article entitled "Euphorbiaceae de Baja California, Mexico" by Monte Woodworth in *Espinasy Flores* 31(9) issue, and thought that you or your readers might be interested in another species in the Euphorbiaceae from Baja California Sur, that is not very well known. The species is *Euphorbia ceroderma*, and one reason for its lack of prestige is its absence in Ira Wiggin's "Flora of Baja California." This is a very unfortunate occurrence because I have always felt that this species would be very popular in cultivation, if more people knew about it. I am not sure how it got overlooked in the Flora because it is not that rare in the southern state on the peninsula, but I hope that someone will consider it for horticultural practices.

Euphorbia ceroderma I. M. Jhtn. is found in the west central portion of the state of Baja California Sur near La Purisima, San Juanico, La Pozo Grande, and Comondu, and also in the state of Sonora, north of Guaymas. It can be very abundant in some populations and can almost dominate the landscape or it may occur only as scattered individuals. Its growth habit is similar to *E. antisiphilitica* of the Chihuahuan Desert, since it is a perennial that forms dense clumps with erect branches, but *E. ceroderma* seems to be a more robust plant up to 2.3 m tall and 3.5 m wide. Like *E. antisiphilitica*, the stems of *E. ceroderma* are yellow-green with reddish tips, waxy, leafless, and a bit spinescent. The cyathium of *E. ceroderma* is more spectacular than that of *E. antisiphilitica* because it has two long (10-20 mm), scarlet, whiplike bracts that hang from each cyathium.

I have enclosed a photo of a rather large plant found along the road to Mission San Javier which exhibits the beauty of this species. Also pictured in the photo are two of my good friends and fellow scientists: Dr. Liz Slauson (Agave expert and curator of the living plant collection at the Desert Botanical Garden in Phoenix, Arizona) and Hugo Cota (doctoral student at Iowa State University working on the genus *Ferocactus*).

Sincerely,

Jon P. Rebman, Ph.D.
Curator of Botany

Grandpa's Brush

BY MONTE WOODWORTH

It is the little things, the small miracles of life that make us wonder about how it is that we are all connected in this cosmic knowledge. Events happen to each of us that give us a yearning — the want to know . . . why me? . . . and why here ? and why now? Take for instance my grandfather's sable hair camera lens brush and its journey to become a power object for me.

After my grandfather past, my mother inherited his old camera gear. About twenty years ago mom and I were looking through his camera bag when I spotted what looked like a tube of lipstick . . . remember the old style — shiny brass tube cover over the inner tube that raised and lowered to expose it — when I pulled off the top I discovered not lipstick, but instead, a beautiful sable hair lens brush that operated in the very same manner. I guess mom saw how much I was taken with the brush because she said I could have it. I have used it to clean my camera lenses for all these years and cherish it not only for its uniqueness, but also because it belonged to grandfather.

Sometime during the 1993 whale season at the San Ignacio Lagoon campsite the brush must have bounced out of my camera bag's open pocket — when I was running in or out of the tent in a hurry for a picture — or who knows what. Anyway, a while later, I discovered it missing and began looking through all the stuff in my tent to no avail. Then I started a comprehensive search of all the places I had been around Punta Piedra for the past few days, still nothing. I described it to everyone in camp and asked them to be on the lookout for my precious brush. Thinking back on it, I was probably over-reacting in their minds, but I really was upset. As the days passed, I slowly resigned myself to no longer having my

grandfather's beautiful brush, but you know, I never bought a modern replacement for it. I just used lens papers or my handkerchief to clean the lenses.

Miracles happen at unexpected times. In February of 1994, Mother Nature attempted to blow our expedition and everything not tied down clean off of Rocky Point. The wind started to blow one evening, which is not all that unusual. By eight-thirty or nine o'clock it was remaining steady at about 20 mph with gusts of 25 mph. As the guests were leaving the main tent (*which protects one from the outside elements very well*) I had to reassure them that their tents were well built and that the guy ropes would secure them to the ground. I cheerfully bid them all a good night and quickly, but surreptitiously, made my way around camp checking each and every guy rope. Feeling secure with the tents, I, too, went to my tent and fell asleep — or I should say, I tried to sleep. For the next three hours the wind increased in speed and the gusts came with such ferocity slapping the walls of my tent into my head that around midnight I was forced to get up. I dressed, grabbed my big Maglite, and started out for inspection patrol. By now the wind was doing close to 50 mph. It picked up the grit off the ground and tried to sand off my face. The first thing you learn to do in a strong wind is to turn your back to it — and then you find that you cannot breath — because as the wind goes sailing past you, it sucks the breath right out of your lungs. Now, I weigh only 135 pounds, and I could manage to walk more or less at a 45 degree angle. But when those 60 mph gusts came smashing through, I found myself walking on air and landing flat on the ground.

As I made my rounds, I found the new guest tents were holding very well. Some of the people were pretty frightened, but when they saw my light on their tents and heard my reassuring shouts through the wind, they felt better. I told them to try to get some sleep and I would see them in the morning. Some actually slept through all of this commotion. I, needless to say, did not sleep the rest of the night. Neither did the wind. It blew all night long and into the morning, calming down only a bit to about 30 mph with 40 mph gusts. In the early light of morning Rocky Point looked as though it had been swept clean by a gigantic broom. A lot of sand had been moved across the lagoon to the distant mesa cliffs. Fine sandy dust had been blown into my ears, my hair, my eyes, my clothes . . . I had sand in places I didn't know I had places!

Most of the staff had been up half the night also. Some of them slept in the main tent, because the wind ripped their tents to shreds. (*The staff was using the older tents and some of these tents could no longer take the stress.*) In fact, one very funny thing happened to me in the middle of this tent and nerve shredding night. While I was making the rounds, I noticed that the tent of our cook, Doña Aurora, was being blown flat to the ground. In the beam of my flashlight I could make out her form struggling to get out of the tent. Now, Doña Aurora is a petite lady of about fifty years of age and trying to move against a 50 mile an hour wind under a large sheet of tent wall was nearly impossible for her. I shouted through the tent to let her know I was there to help — to my surprise Josele answered back. He was in camp that night, . . . and had ended up sharing her tent. In the dust storm, I was just able to see the door zipper with my light and I managed to open it enough to let in some air which started to inflate the tent. I

told them to hand out their bedding and we would go into the main tent for the remainder of the night. Josele held the door open and I, with flashlight in one hand, reached for what I thought was Doña's bedding. When my other hand made contact with the object it was round and hard — I had to feel for a place to grip it. At that point I turned my flashlight toward what Doña was thrusting out the door, and to my amazement I was holding a chamber pot half full of warm pee. No one ever said that tour guiding is not a challenge, but what to do with a half full chamber pot in a wind storm certainly took careful and precise thinking on my part. As I did not want to wear the contents, I quickly put my back to the wind and with arm extended walked swiftly away from the tent and let her fly — praying that the wind would not suddenly change direction. After that we moved their beds into the main tent and had a good laugh.

In the morning Doña made breakfast while I and the pangeros checked and adjusted the guy ropes on the main tent and generally secured anything else that needed it. Little by little the guests started to brave the wind and make their way towards the bathrooms and the big tent. I had to go around to many of their tents and convince them that it was safe to come out and . . . "No, they weren't in Kansas anymore." Soon they were all in the main tent for breakfast, talking very excitedly about how they thought they would blow into the lagoon — many said they had terrific dreams about flying. Well, I had to announce that this wind could possibly blow all day long and it would be impossible to do any whale watching in the boats. So, our options were activities in camp: games, puzzles, books, videos in the main tent (*smart*) or, for the brave at heart (*crazy*), a walk

around Rocky Point to witness the ecological impact of a low-grade hurricane on the desert environment (*not so smart*). Karen Baker, fellow tour guide and camp nurse, suggested tortilla making lessons in the kitchen (*smart and productive*). While I was making these announcements the guests were eating breakfast and the wind was roaring with laughter and doing its best to compete for attention.

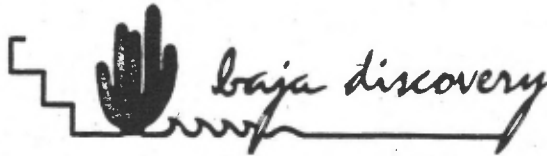
All of a sudden, an enormously slapping series of gusts hit at us and the main tent's roof began billowing up and snapping back down in rapid succession causing the ridge pole to crack. I had to think fast. Quickly, I dragged two ice chests to the center of the tent under the cracked and sagging ridge pole. I convinced Francisco to temporarily be a human center pole and hold up the ridge pole. I told the guests to go on eating . . . this was just a minor problem . . . all in a day's work. Then I grabbed Alejandro and ran out of the tent. I told Alejandro to put together another center pole and I ran out to find a piece of PVC large enough to make a slip fit over the ridge pole and drilled a hole in the center of it to insert the top pin of the new center pole into. Meanwhile, as the blood ran out of one arm, Francisco was changing arms to rest and use the other. We worked as fast as we could and in a very short time we replaced Francisco with a new center-center pole, to the amazement and applause of the guests. Satisfying!

I was exhausted — having next to nothing of sleep. I had been working against the wind all night and morning, and I was really beginning to feel it . . . drained, zapped, and hungry. After the guests finished breakfast, most of them had wandered outside. I had just sat down to eat something, when a windblown woman stuck her head inside the tent door and announced that her tent was collapsing. I said okay and gathered what little oomph I had as I started for the door. Then the miracle happened! As I bent over to exit the double over-lapping door

flaps, I was looking at the ground. Because the wind had moved all of the loose top sand during the night, I saw what looked like a shotgun shell. As I reached out to pick it up this overwhelming knowing rushed through me just like running into a long lost friend after many years. I knew what it was even before my fingers touched its corroded green patina skin. My heart shot directly to my throat. My eyes began to fill with tears of joy. My grandfather's lens brush had been given back to me. I sent someone else to help the guest with the collapsing tent and sat back down with my treasure — it was the only thing I could do right then. I held it in my hand for a moment and then slowly pulled the tube open. To my delight, the inside was absolutely perfect — shiny brass, the mechanism turned smoothly and the sable hair brush slowly emerged unscathed by time and torture. Lost one year earlier, probably stepped on and trampled into the mud during a rain storm, dried and baked in the hot desert sun of summer and then sandblasted free from its tomb for me to find again is indeed a powerful energy.

The wind did die down eventually, and things got back to normal. We watched the whales. We made new friends as the calving season passed. And I, for one, gained a new appreciation for the wind (*I still do not like its destructive force, but I respect it.*) and every time I use grandpa's brush I have that feeling of knowing that I am connected too.





P.O. BOX 152527, SAN DIEGO, CA 92195
1-800-829-BAJA · (619) 262-0700

Dear Cactus Enthusiasts!

Thank you for your interest! Baja Discovery is pleased to offer the enclosed programs for your consideration.

Our 5 day pre-convention program, **July 1-5, "Boojums and Boulders"** takes a close look at the Central Desert area of northern Baja. On the 10 day post convention program, **July 12-21, "Transpeninsular Trek"**, our group will travel the entire length of the peninsula- about 1000 miles from San Diego to Cabo San Lucas, Lands End at the southern tip of the peninsula. On both of these very special trips you will travel overland in air conditioned 12 passenger vans with a maximum 8 guests per van. You will enjoy hotel comfort each night and spend fascinating days afield.

Baja's hot summer deserts can be challenging. In July, temperatures can be in excess of 100 degrees in many parts of Baja. This is an important element to consider when making your decision. However, the rewards are great and Baja Discovery's staff, with over 20 years experience in Baja, is prepared to provide for you a comfortable and exciting adventure.

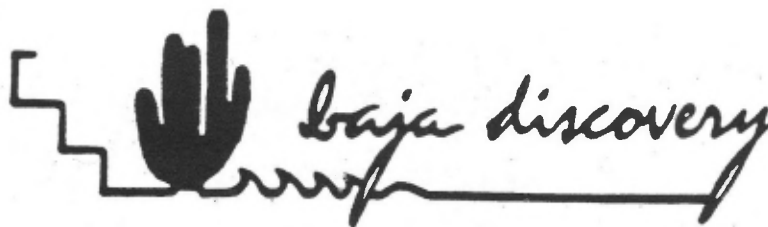
Your Botanist host: Wendell "Woody" Minnich. For 25 years Woody has been a leading influence in the many facets of the Cactus and Succulent hobby and its study. He has led some 75 botanical trips into Baja California and mainland Mexico as well as lectured and written articles, world wide, on the plants of these regions. He is considered an expert on the Mexican genera of Cacti and is also known for his horticultural achievements with these plants. He has discovered numerous species and rediscovered many others. Woody has also been extremely active in many Cactus and Succulent organizations. He is honored as a life member of numerous societies and has served as President, newsletter editor, show chairman and plant culture chairman for some of these groups. Woody is one of the creators of the largest known Cactus and Succulent Show, The Inter-City C.S.S. He has also been the inspiration behind many of the new concepts and philosophies of staging and the showing of plants. As a leader and an Educator, he is known for his boundless energy, creative spirit and willingness to share!

Your Naturalist Guide: Monte Woodworth. With over twenty years of experience on the peninsula as a guide, he offers a wide range of expertise. In addition to his intimate knowledge of the plants of Baja, he is an expert birder. He will share his knowledge of Baja's animals, geology, cultural history, and in general, interpret the unique and fragile ecosystems that we will explore. Also, for you stargazers, Monte will be your guide to the spectacular night skies.

There will be an additional botanist host on each trip and this information will be forwarded when confirmed. Each trip will be limited to 24 participants.

How to sign up: Complete the enclosed Quick Reservation Form and forward along with a \$300.00 deposit to confirm your space. Additional information including a Baja Discovery application, personal items list, tourist card, background information on Baja, and plant list will be forwarded on receipt of deposit. If you have any questions please call us at **1-800-829-2252** or **619-262-0700**. Fax # **619-422-6373**.

We hope you will join us!



**BOOJUMS AND BOULDERS
THE PLANTS OF THE CENTRAL DESERT
BAJA CALIFORNIA, MEXICO
PRE CONVENTION FIELD PROGRAM
5 DAYS
JULY 1-5, 1997**

A plant enthusiast's delight... and we will explore in depth! This Program offers breathtaking scenery, from the wide, sandy beaches along the Pacific Ocean to the Cactus forests of the central desert. Giant Cirios (*Fouquieria Columnaris*), known as the Boojum after a mythical creature from Lewis Carroll's "Hunting of the Snark", and towering Cardons (*Pachycereus pringlei*) will be our companions for most of this visit to one of the most exciting desert regions in North America. Our expert guides will introduce you to Northern Baja's biotic community... its unusual plants and unique animals.

Features Included:

- Van transportation round trip between San Diego and San Ignacio • Meals (7) • Four nights hotel accommodations • Small groups to ensure personalized service • Experienced hosts and guides

Features Not Included:

- Some meals at hotels & restaurants (6) • Tips to guides and waiters • Personal items • Trip insurance

ITINERARY:

Day 1: SAN DIEGO - SAN QUINTIN - We will meet you at the the convention site at 8 AM. From the border on Hwy. 1, we will drive along the Pacific coast through Ensenada and Baja's premier wine producing region with a stop for lunch near San Vicente and a look at *Ferocactus viridescens*. Late afternoon, we'll reach our hotel La Pinta on a wide white Pacific beach covered with sand dollars. Time for an excursion to the cindercones and lava flows at the beach area near San Quintin where we'll see *Dudleya anthonyi*, *Mammillaria dioica*, *agave Shawii* and other succulents of the area. We'll share dinner at the hotel and discuss the days ahead. Maybe a walk along the ocean's edge before sleep to the sound of the surf. (L, D)

Day 2 & 3: CATAVIÑA - For these next two days experience the rare plants, the wildlife, the rich natural beauty of this pristine and isolated area. From San Quintin, we'll drive south and enjoy an early morning stop at the beach below the bluffs of El Socorro. We'll wander through *Berberocactus emoryi*, *Echinocereus maritimus*, *Agave shawii*, 3 species of *Dudleya*, *Mammillarias dioica* and *louisiae*, *Machaerocereus gummosus* and more. We'll have lunch in the arroyos south of El Rosario among the first colonies of *Fouquieria columnaris* and *Pachycereus pringlei*, then continue on to our "base camp," Hotel La Pinta, located in the heart of this undeveloped Natural park. We'll settle in and then... begin our 2 day exploration of the area. We won't have to venture far, for our hotel is sitting in a giant "cactus garden". We'll travel a portion of old Highway One, a once used dirt track where giant granite boulders and cactus forests line our path, visit a local cave painting site, walk the arroyos and canyons and enjoy plants plants plants! Our guides will interpret this unique desert ecosystem and introduce you to its many endemics. We'll enjoy picnic lunches off the beaten path and at night relax at the comfortable Hotel La Pinta Cataviña. (L)

Day 4: CATAVIÑA - SAN QUINTIN - We'll head north again, through the ever-changing desert landscape. We'll make a trip in to see the old onyx mine region and it's flora. Time and stops permitting we will see many additional succulent plants including: *Dudleya brittonii*, *Mammillarias hutchinsoniana* and *tetrancistrata*, *Ferocactus gracilisand fordii*, *Myrtillocactus cochal*, *Lophocereus schottii*, *Agave desertii* and *sobria*, *Yuccas*, *Euphorbias* and others. We'll return to our hotel at San Quintin, enjoy a farewell fiesta dinner, a relaxing evening, cool ocean breezes and a good night's sleep! (L, O)

Day 5: SAN QUINTIN - SAN DIEGO - After breakfast we'll head north. We'll stroll through the colorful seaport village of Ensenada and shop at the many arts and craft stores. We'll have a late lunch at one of the city's finest restaurants before heading back to San Diego arriving in the evening. (L)

Program Cost:
\$950.00 Double Occupancy
Add \$120.00 for Single

NOTE: Additional departure and trip information will be made available upon receipt of \$300.00 deposit.
Trip fares and schedules are subject to change.

BAJA DISCOVERY 1-800-829-2252

**TRANSPENINSULAR TREK
THE PLANTS OF BAJA CALIFORNIA MEXICO
POST CONVENTION FIELD PROGRAM
10 DAYS
JULY 12-21, 1997**

FEATURES INCLUDED:

- One way van transportation between San Diego and Cabo San Lucas • Nine nights hotel accommodations enroute • All ground transportation and transfers • 17 meals (as marked on itinerary) • Air transportation from La Paz to Tijuana • Land Transfer Tijuana to San Diego • Botanist hosts • Experienced Baja guides • Small groups to ensure personalized service.

FEATURES NOT INCLUDED:

- Some meals at hotels and restaurants (11) • Tips to guides and waiters • Personal items • Trip insurance

ITINERARY

Day 1: SAN DIEGO - SAN QUINTIN - Baja Discovery staff will meet you at the convention site at 8:00 AM. From the border on Hwy. 1, we'll drive along the Pacific Coast through Ensenada and Baja's premier wine-producing region with a stop for lunch at San Vicente. Near the ocean we'll explore volcanic lava flows and the colonies of *Dudleya anthonyi* that grow there. We'll enjoy dinner at our Hotel La Pinta and then a walk along the cool ocean shore... or just relax! L, O

Day 2: SAN QUINTIN - CATAVIÑA - Up early, breakfast, and off for a morning stop at the fascinating bluffs of El Socorro, type locality of *Mammillaria kusiae* and site of many other succulent plants. We'll see *Berberocactus*, *Agave shawii*, *Ferocactus fordii*, 3 species of *Dudleya*, *Euphorbia misera*, *Echinocereus maritimus* and much much more. Midday will take us along parts of the "old road" in the heart of the central desert where the cactus forests really begin. We'll wander through the pink elephant trees (*Pachycormus discolor*) and blooming boojums, (*Fouquieria columnaris*) and discover the Blue Palms growing along the granite boulder covered arroyos. We'll overnight at the relaxing Hotel La Pinta in Cataviña, sharing discoveries, companionship and margaritas. B, L

Day 3: CATAVIÑA - BAY OF LOS ANGELES Today we'll travel through some of Baja's least inhabited and most isolated areas. Our morning will start with the famous Jaraguí grade where we'll see colonies of the spectacular *Ferocactus acanthodes* v. *tortuosuspinus* and beautiful black spined *Echinocereus engelmannii*. Midday will take us through Laguna Seca Chapala, the succulent forested Punta Prieta region and on to the scenic vistas overlooking the Bay of Los Angeles. We'll see the Smith island chain leading out to the spectacular island, Angel de la Guardia and we'll find many incredible succulents including: *Bursera hindsiana*, *Jatropha cinerea*, *Opuntia inivicta*, *Echinocereus lemeianus*, *Mammillaria insularis* and a great many more. We'll overnight at Las Hamacas Hotel on the Sea of Cortez. B, L

Day 4: BAY OF LOS ANGELES - GUERRERO NEGRO Today we'll head back to the cooler Pacific where we'll follow a path along a magnificent headland accompanied by a variety of land and sea birds. The low hills leading down to the beach areas will provide us with wonderful natural bonsai specimens of *Pachycormus*, *Bursera microphylla* and *Fouquieria duguetii*. We'll also see *Mammillaria glareosa* (*dawsonii*), *blossfeldiana* and *doica* as well as the very attractive *Ferocactus coloratus*. Tonight, dinner at one of Baja's finest restaurants, Malarmmo, and overnight at the Hotel La Pinta, located on the 28th parallel, which marks the North-South divide of Baja California. L

Day 5: GUERRERO NEGRO - SAN IGNACIO - South with a midmorning stop into the Sierra San Francisco a myriad of fascinating plants and beautiful vistas. Forests of *Pachycereus pringlei* will dominate the landscape where we'll find many other unusual succulents including: *Iberivillea sonorae*, *Pedalarthus macrocarpus*, *Fouquieria duguetii*, *Mammillaria brandegeei* and *hutchinsoniana* and more. At day's end we'll arrive at the charming oasis village of San Ignacio with its "10,000" date palms, freshwater river and impressive stone mission. Dinner at a colorful local restaurant and overnight at Hotel La Pinta. L, O

Day 6: SAN IGNACIO - LORETO - Our drive today takes us past the base of a 6,500 foot volcano, Tres Virgenes. We'll take a closer look at the largest elephant trees in Baja that grow on the lava flows in this region. From here the highway winds its way eastward, and descends to meet the Sea of Cortez at the old French copper mining town of Santa Rosalia. An hour south at Mulege we'll see one of Baja's loveliest sites, Bahía Concepcion, and our first *Cochermia* (*Mammillaria poseigeni* and *Echinocereus brandegeei* gold spines. The Bay of Concepcion is known for its turquoise waters, sandy beaches and is surrounded by most impressive mountains: the type locality of *Ferocactus rectispinus*. We will reach Loreto and our sea side hotel by late afternoon. B, L

Day 7: LORETO - LA PAZ - Our early morning drive will take us past offshore islands, seaward extensions of the Sierra Giganta. Turning inland, we'll be treated to imposing mountain vistas, before entering the vast Magdalena Plain with its fields of crops, claimed from the surrounding desert. Back on the Pacific, we'll look for the creeping devils (*Machaerocereus eruca*) near the fishing village of San Carlos and just north of La Paz. We'll explore among the beautiful *Mammillaria albicans*, *traileana* and *cochermia poseigeni*. We'll stay tonight at Hotel Los Arcos along the bay in the colorful bustling port city of La Paz. B, L

Day 8: LA PAZ - CABO SAN LUCAS - Driving southward along Highway 1, we'll enter the Sierra de la Laguna and explore the now quiet villages of El Trunfo and San Antonio, which date back to mid 18th century silver mines. We will encounter a myriad of succulent plants in these Sonoran desert canyons from numerous *Burseras*, *Mammillarias*, *Ferocactus*, *peireskias*, *Euphorbia xantii* and our first *Pachycereus pecten-aboriginum*. In this tropical region we'll also encounter very large *Ficus palmieri*, and many other fascinating and unusual plants and animals. By evening we will be at our scenic hotel at Lands End... where the Sea of Cortez meets the Pacific. B, L

Day 9: CABO SAN LUCAS - LAPAZ - We'll drive back North today along the Pacific coast. Our stops along the way will introduce you to many cacti and succulents, including: *Cercocarpus edulis*, *Dudleya xantii*, *Mammillarias schumannii*, *traileana*, *armilata* and *peninsularis*, *Echinocereus sciurus*, *Lophocereus* and..... We'll return to the Hotel Los Arcos with time for a walk along the Malecon before our farewell fiesta dinner! L, D

Day 10: LA PAZ - SAN DIEGO - The morning is yours to shop or just relax before the midday flight from La Paz to Tijuana. We'll transfer across the border to San Diego, arriving mid to late afternoon. A trip of a lifetime comes to a close.

COST:
\$2295.00 DOUBLE OCCUPANCY
ADD \$250 FOR SINGLE

NOTE: Additional departure and trip information will be made available upon receipt of \$300.00 deposit.
Trip fares and schedules are subject to change.

MAKE TIME FOR ANZA-BORREGO: OUR BACKYARD DESERT

by Carol & Joe Wujcik

This fall we have been leading small groups of cactophiles into the desert showing them our favorite plants and places. It's like visiting friends. And Anza-Borrego (part of the Colorado Desert, which in turn is part of the Sonoran) was our very first desert. One has a special bond for the "first" desert.

On our latest visit (November 2 and 3, 1996), Jim Kellogg and Darlene and Earl Osborn of the San Gabriel Valley Cactus and Succulent Society joined us in visiting Anza-Borrego Desert State Park to check out the plants. At Tamarisk Grove Campground we met Jim Dice. Jim, a specialist in the genus *Dudleya*, has worked as the Curator of the Desert Collections at Huntington Botanical Gardens. Eventually he moved into San Diego County and is currently a botanist with the California Department of Fish and Game, working out of his home, now in Borrego Springs. His wife is a park ranger, so Anza-Borrego's well-being has extra importance to him. On this Saturday he showed us some of his favorite places.

An area special to Jim and the Anza-Borrego Foundation is the Sentenac Canyon area located along State Scenic Highway 78 and County S2. The Foundation is seeking to purchase this area for the park. Sentenac Canyon is the Foundation's most ambitious project. Not only are valuable wetlands involved, but areas which include the almost garden-like succulent and dryland areas in and adjacent to Sentenac Canyon. This land would bring the park's boundary to the S2. Many people believe this is already park land, but it is still private and being grazed. The time has now come to purchase this land as the owner wants to sell it to the park.

Jim reminded us that George Lindsay said one can see most of the cacti of San Diego County by going to only two locations -- Sentenac Canyon and Cabrillo National Monument. (See Lindsay's Cacti of San Diego County, 1963, out of print.)

This canyon was our introduction to desert land. We first visited it many years ago on a warm April morning. Plants were practically hanging from the walls of Sentenac Canyon....we couldn't believe a desert could be so crowded. Carol drove down the road weaving from side to side because all we could see were blooming cacti and all kinds of desert shrubs in full riotous flower. Carol could hardly take her eyes from the canyon walls. Luckily, traffic was light that day and the only damage was to the psyche. We've never recovered from that incredible sight, and each year we try to return.

Of course, saving this priceless habitat -- actually several types of habitats -- takes money. Since this is "cactusland," the San Diego Society is likely already interested and hopefully involved; but in any event, we want to add a reminder that time is important and now is the time! Forty species of local plants are considered rare or endangered out of a total of at least 1,000 species. As for succulents, "check out" the checklist following this article and marvel at the variety! All these as well as a record of human history are contained in this region.

To join the Foundation and receive information, write the Anza-Borrego Foundation, PO Box 2001, Borrego Springs, CA 92004. Phone is 619-767-0446. A student membership is \$10, individual \$25, Family or Dual \$35, Supporting \$50, Sustaining \$100, and there are other tiers. To donate to specifically help preserve the Sentenac Canyon and Cienega, you can donate \$500 to help "buy" a half-acre, \$1,000 for an acre, and on up. Each tier receives a thank you gift. The donation can be in honor or memory of a person or organization.

For Sentenac Canyon it's time to act, if we really do love these plants and this land.



Anza-Borrego Foundation

Your help is needed now

to save the precious natural and cultural resources we are so dangerously close to losing. Your membership in the ANZA-BORREGO FOUNDATION will help hold together the other pieces. Since 1967 the Foundation has acquired over 19,000 acres through gifts of land and by purchasing inholdings from willing sellers. The land is then transferred to park ownership. Over the years, 95% of donations to the ANZA-BORREGO FOUNDATION have gone directly to purchasing land for the park.

Membership Benefits

Your tax-deductible membership in the ANZA-BORREGO FOUNDATION, a 501(c)(3) non-profit public benefit corporation, entitles you to a newsletter concerning recent acquisitions, park issues and upcoming events. **All members** receive discounts to Foundation activities and programs including popular springtime hikes and walks. **Patron** members receive a CD-ROM Windows version of the best-selling *Afoot and Afield in San Diego County* by Jerry Schad. **Benefactor** members receive the CD plus the opportunity to participate in an off-road nature tour with box lunch provided. In addition to all of the above benefits, members of the **President's Circle** will be invited to an exclusive annual dinner with the ABF President and special guests.

YES!! I want to save precious cultural and natural resources through my membership in the **Anza-Borrego Foundation** by providing support at the following membership level:

- Student - \$10
- Individual - \$25
- Family/Dual - \$35
- Supporting - \$50
- Sustaining - \$100
- Patron - \$500
- Benefactor/Corporate - \$1,000
- President's Circle - \$2,500 +

Enclosed is my additional gift of \$_____

My (or my spouse's) employer will match my contribution. Enclosed is my matching gift form.

Membership

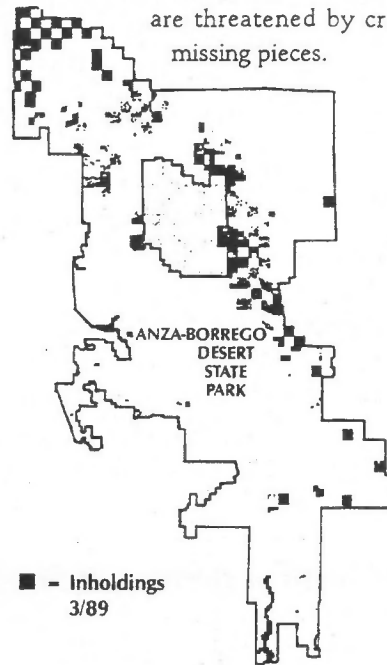
NAME(S) _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

The Anza-Borrego Desert State Park in San Diego County is the largest state park in the nation. It is the setting for countless treasures of natural beauty, intriguing history, fascinating wildlife and unique flora. Many of these treasures are threatened by critical missing pieces.



Some of these losses are irreplaceable.

The missing pieces within this wonderful park are called *inholdings*—50,000 acres of private property located within the park's 600,000 acres. Just as a jigsaw puzzle with missing pieces cannot reveal the entire picture—public access and wildlife habitat can be lost through inholdings.



Membership signifies your concern for the Anza-Borrego Desert State Park

Join Today!

ANZA-BORREGO FOUNDATION P. O. Box 2001
Borrego Springs, CA 92004

ABF is a 501(c)(3) non-profit corporation.

ANZA-BORREGO STATE PARK C & S CHECKLIST

compiled by Carol Wujcik

Agave deserti, medium-sized bluish Agave.

Bursera microphylla (elephant tree) hard to spot from distance, wonderful caudiciform tree, Colorado Desert, CA is northernmost area of range.

Dudleya saxosa aloides (live-forever) -- easiest to see when in flower.

Dudleya pulverulenta arizonica (live-forever) -- larger wider leaves.

Echinocereus engelmannii v. engelmannii (hedgehog) clumps, various spine colors.

Echinocereus triglochidiatus v. mojavensis (Mojave mound cactus) high alt. -- only two have claimed it is in the park!

Ferocactus cylindraceus (acanthodes) v. cylindraceus (barrel cactus) varied colors including red, reddish orange, hot pink, soft pink, white!, yellow and combos, especially in Sentenac Canyon. (Benson uses epithet "acanthodes.")

Ferocactus cylindraceus (acanthodes) v. lecontei (barrel), slightly shorter less twisty spines. Fouquieria splendens (ocotillo).

Mammillaria dioica (pincushion) hooked-spined, larger than "tet" -- but appears less open, and tighter spined. Overall appears grayish or tan. Will cluster in time.

Mammillaria tetrancistra; small hooked-spined mam (dark centrals, white radials) hard to see except when flowering or fruiting. Smaller, whiter than dioica but tubercles and thus spination appear more open. Anza-Borrego form is larger than other forms.

Nolina bigelovii (actually by the I-8 on BLM land, if you are nitpicking).

Nolina parryi

Opuntia acanthocarpa v. ganderi (buckhorn cholla) .

Opuntia basilaris (beavertail) easy to spot, bluish roundish to oblong pads.

Opuntia bigelovii v. bigelovii (jumping or teddy bear cholla) short fat joints, heavy appearing stem, gets tall, has golden appearance.

Opuntia bigelovii v. hoffmannii -- less spiny, more tubercled, very big, ginger-colored spines, endemic only to Mason Valley area.

Opuntia chlorotica (pancake cactus) blue/green roundish pads, yellow/gold spines, short trunk -- can be seen in Sentenac Canyon.

Opuntia echinocarpa v. echinocarpa (silver or golden cholla) as wide, or wider than tall as vs. O. bigelovii -- more spreading.

Opuntia echinocarpa v. wolfii -- less spiny, larger joints (Jepson has O. wolfii as species).

Opuntia littoralis v. vaseyi, also hybrid swarms with O. phaeacantha discata, see note #1.

Opuntia parryi v. parryi (cane cholla) not very spiny compared to other chollas.

Opuntia phaeacantha v. discata (engelmannii) green prickly pear type, hybridizes with O. littoralis v. vaseyi (See note #1 below).

Opuntia ramosissima (diamond or pencil cholla) long needle-like spines.

Yucca schidigera (Mojave yucca) short, but substantial yucca, close to ground but can produce short heavy trunk with offsets -- has filaments along leaves.

Yucca whipplei (Our Lord's candle) no trunk.

Note #1: According to Jim Dice's Jepson reference, the hybrid swarm is Opuntia vaseyi please contact a botanist to sort this out!!!!

Note #2: Palm species in the park is Washingtonia filifera.

Reference: Lyman Benson's Cacti of the US and Canada, 1982.

American Horticultural Society

REPRINTED FROM THE 1995-96 ANNUAL REPORT OF THE AMERICAN HORTICULTURAL SOCIETY.



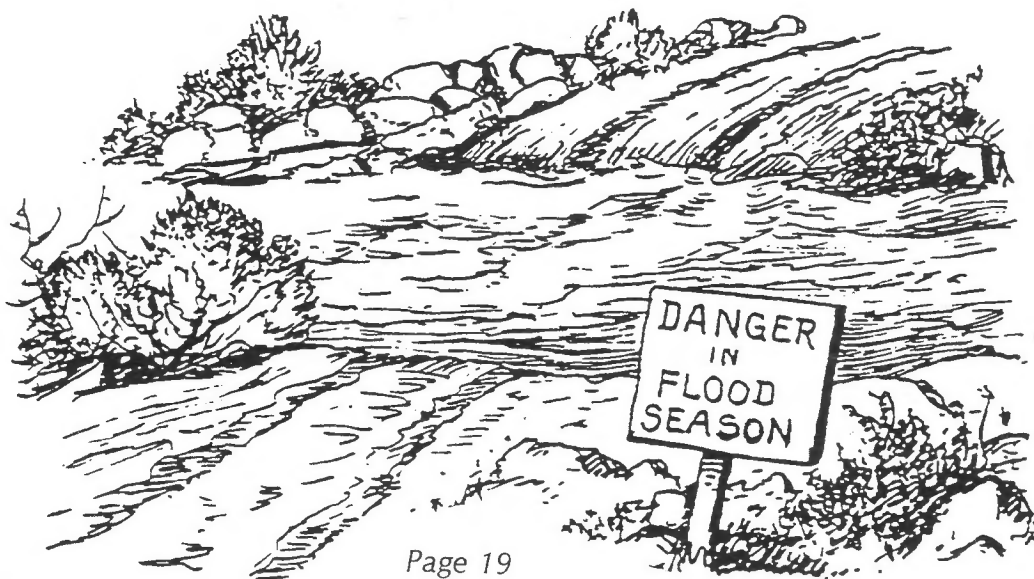
AHS Flower Show Citations

Del Mar Fair Flower and Garden Show

XEROPHYTIC GARDEN – COLOR WITH SUCCULENTS BY MICHAEL AND JOYCE BUCKNER

This winning display emphasized year-round color that is not dependent on flowers and blooms, an important factor for garden landscapes in Southern California. The Buckners used a variety of cactuses and specimen succulents, combining Old and New World plants. Included in the exhibit were many rare aloes and aloe trees, as well as other succulents from South Africa, Mexico, and South America. This beautiful design was very effective in demonstrating the horticultural possibilities for a frost-free environment. The award was presented by Gayle Wilson, wife of California governor Pete Wilson.

AHS Citations are given at flower shows across the country to exhibits or displays that best demonstrate "the bond between horticulture and the environment, inspiring the viewer to beautify home and community through skillful design and appropriate plants."

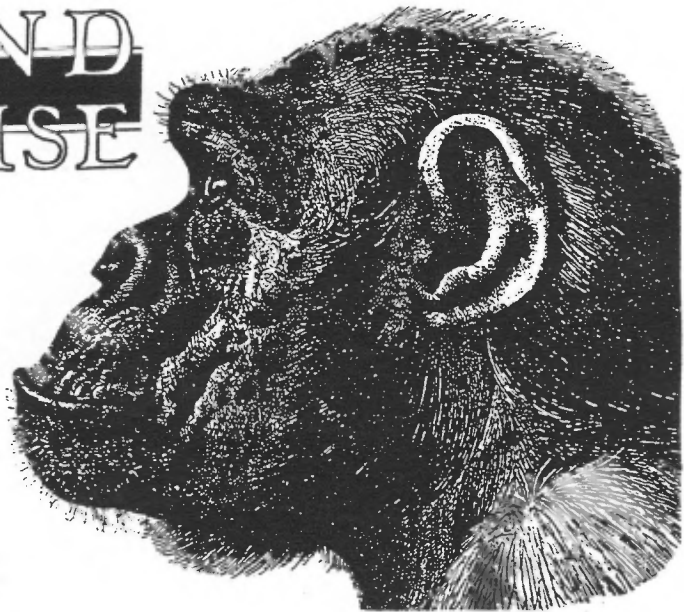


WISE AND OTHERWISE

By Michael Buckner

***"He who doesn't
treasure life, is not
worthy of it."***

LEONARDO DA VINCI



What is it exactly that binds us so closely to living things? The biologist will tell you that life is the self-replication of giant molecules from lesser chemical fragments, resulting in the assembly of complex organic structures. . . . The poet-in-biologist will add that life is an exceedingly improbable state, metastable, open to other systems, thus ephemeral — and worth any price to keep.

— Edward O. Wilson, entomologist and evolutionary biologist, *Biophilia*, Cambridge, MA: Harvard University Press, 1984 (Wisdom of the Edlers, Suzuki & Knudston)

"A human being is a part of the whole that we call the universe, a part limited in time and space. He experiences himself, his thoughts and feelings, as something separated from the rest—a kind of optical illusion of his consciousness. This illusion is a prison for us, restricting us to our personal desires and to affection for only the few people nearest us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living beings and all of nature."

— ALBERT EINSTEIN

"I keep my ideals, because in spite of everything I still believe that people are really good at heart."

— ANNE FRANK

"Individuals can affect the world by becoming a model or an example in their small circle of influence. Just as a rock thrown into a pond causes ripples to gradually keep going out until eventually they are very small, so our acts influence the ecology of the entire human race."

— STEPHEN R. CONEY, PhD
Love Enough for All

***"It is only with the heart that one can see rightly;
what is essential is invisible to the eye."***

Saint Exupéry (1900-1944) from *The Little Prince*

WISE AND OTHERWISE

***"The best and most beautiful things in the world cannot
be seen, nor touched . . . but are felt in the heart."***

Helen Keller (1880-1968)

***"Generosity is giving more than you can,
and pride is taking less than you need."***

— Kahlil Gibran, *SAND AND FOAM* 1926

***"Kindness is more important than wisdom, and
the recognition of this is the beginning of wisdom."***

— THEODORE ISAAC RUBIN

***Generosity is not in giving me that which I need
more than you do, but it is in giving me that which
you need more than I do.***

— Kahlil Gibran, *SAND AND FOAM* 1926

Ryokan, a Zen master, lived the simplest kind of life in a little hut at the foot of a mountain. One evening a thief visited the hut only to discover there was nothing in it to steal.

Ryokan returned and caught him. "You may have come a long way to visit me," he told the prowler, "and you should not return empty-handed. Please take my clothes as a gift."

The thief was bewildered. He took the clothes and slunk away.

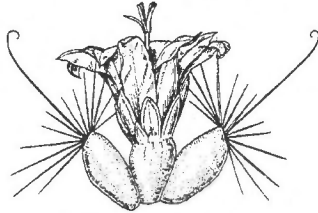
Ryokan sat naked, watching the moon. "Poor fellow," he mused, "I wish I could give him this beautiful moon."

from *Zen Flesh - Zen Bones: 101 Zen Stories* transcribed by Nyogen Senzaki and Paul Reys, twenty-third printing 1989; published by Charles E. Tuttle Co. Inc., Rutland, Vermont / Tokyo, Japan.

**The San Diego Cactus & Succulent Society, Inc.
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Mammillaria thornberi

Espinas y Flores

**Editors: Michael and Joyce Buckner - (619) 222-3216
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The San Diego Cactus and Succulent Society, Inc. is open to all persons interested in growing cacti and other succulent plants. Meetings are held the second Saturday of each month (except June, Sept. and Dec.) at 1:00 PM in room 101, Casa del Prado, Balboa Park. Executive Board meetings are open to all members; call any officer or director for the time and location. Annual dues are \$10.00 per single member per year, \$5.00 for each additional member within the same household. Single copies of *Espinas y Flores* are \$1.00 per copy sent within the USA; foreign subscriptions are \$25.00. Affiliated with the Cactus and Succulent Society of America, Inc. Fax available - please call editor at (619) 222-3216 for number.

Season's Greetings

PROGRAM FOR DECEMBER: HAPPY HOLIDAYS
ELECTION OF SDC&SS OFFICERS
DINNER PROMPTLY @ 1:00 PM
SPECIAL PLANT EXCHANGE
SIGN UP OF VOLUNTEERS FOR EDUCATION & REFRESHMENTS
DISTRIBUTION OF GIFT PLANTS TO MEMBERS
MINI-AUCTION
NO LIBRARY AND NO PLANT SALES

HOLIDAY BUFFET MENU :

ROAST TURKEY WITH SAGE DRESSING
MASHED POTATOES WITH GIBLET GRAVY
HOT BUTTERED CORN
TOSSED GREEN SALAD WITH TOMATOES
TWO CHOICES OF SALAD DRESSING
RELISH TRAY OF FRESH VEGETABLES
CRANBERRY SAUCE
ROLLS AND BUTTER
COFFEE, TEA, SODAS OR WINE
APPLE OR PUMPKIN PIE

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YES! PLEASE RESERVE HOLIDAY DINNERS FOR MEMBERS @ \$10.00* PER MEMBER:

MEMBER NAME (S) _____

PLEASE RESERVE HOLIDAY DINNER FOR GUESTS @ \$10.00 (SORRY, NO GIFT
PLANT FOR NON-MEMBERS).

GUEST NAME (S) _____

SATURDAY, DECEMBER 14TH MEETING BEGINS AT 12:00 NOON - HOLIDAY
DINNER TO BE SERVED AT 1:00 - PLANT EXCHANGE DURING DINNER, GIFTS
PLANTS WILL BE DISTRIBUTED DURING DESSERT.



SAN DIEGO CACTUS & SUCCULENT SOCIETY MEMBERSHIP APPLICATION

The San Diego Cactus & Succulent Society is a nonprofit, hobby organization created to stimulate interest in succulent plants. This society brings together people with a common interest for the purpose of educating the public about the beauty and uniqueness of these remarkable plants, encouraging proper collecting and maintenance of the plants through preservation of native habitats and horticultural propagation, and to foster good fellowship. You are invited to join our society, whether you are an expert, amateur, or a beginner with an interest in unusual plants and flowers.

You will receive our publication *Espinas y Flores*, one of the best cacti and succulent newsletters. We produce 11 issues a year. You will get great articles and keep up with club news for the next year.

Our meetings are on the second Saturday of the month (except June and September) and newsletters are received the week of the meeting. We offer knowledgeable speakers who present educational & entertaining programs; many are world renowned scholars, botanists, explorers and authors. The San Diego Cactus & Succulent Society's Annual Show and Plant Sale occurs the first weekend of June in Room 101, Casa del Prado, Balboa Park, San Diego. A wide range of succulent plants, ceramic pots, and growing supplies are available during most meetings. There is also a plant exchange table and a library. For more information regarding membership, please call Elizabeth Glover, Membership Chair, at (619) 264-6769.

Yes, I/We wish JOIN or REJOIN the San Diego Cactus & Succulent Society.

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