

MAMMILLARIA THORNERI

AFFILIATE OF THE CACTUS AND SUCCULENT SOCIETY OF AMERICA
AND THE INTERNATIONAL ORGANIZATION FOR SUCCULENT PLANT STUDY

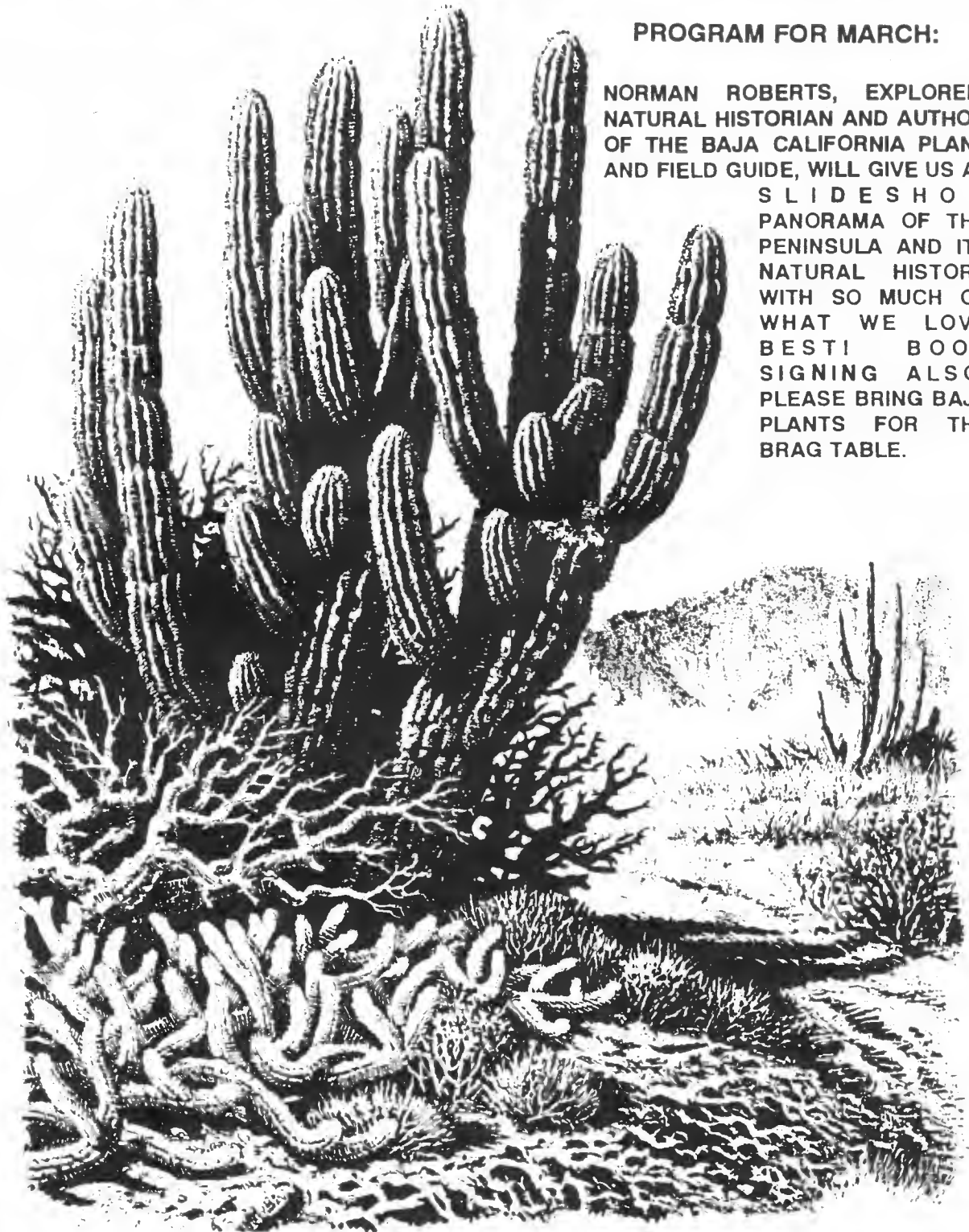
Espinas y Flores

THE NEWSLETTER OF THE SAN DIEGO CACTUS & SUCCULENT SOCIETY, INC.

VOLUME XXVIII NUMBER THREE, SATURDAY MARCH 13, 1993

PROGRAM FOR MARCH:

NORMAN ROBERTS, EXPLORER,
NATURAL HISTORIAN AND AUTHOR
OF THE BAJA CALIFORNIA PLANT
AND FIELD GUIDE, WILL GIVE US A
S L I D E S H O W
PANORAMA OF THE
PENINSULA AND ITS
NATURAL HISTORY
WITH SO MUCH OF
WHAT WE LOVE
BEST! BOOK
SIGNING ALSO.
PLEASE BRING BAJA
PLANTS FOR THE
BRAG TABLE.



Our cover: Another excellent stone lithograph by San Diego artist Jim Melli. This one "The Central Baja Desert" was accomplished in 1983, number 9/22, collection of editors.



PLEASE BRING GOODIES

REFRESHMENT BREAK!

Happy Birthday Laura DeMerritt!!



PLEASE RENEW YOUR MEMBERSHIP

MEMBERSHIP: LAURA DE MERRITT, 619-571-5127. DUES ARE \$10.00 FOR SINGLE MEMBERSHIP AND \$5.00 FOR EACH ADDITIONAL MEMBER OF SAME HOUSEHOLD (ONE ESPINAS y FLORES MAILED). CHECKS SHOULD BE MADE OUT TO S.D.C.& S.S. AND MAILED TO P.O.BOX 33181, HILLCREST STATION-102, SAN DIEGO, CA. 92163-3181.

MEETING TIME: MEETINGS ARE HELD THE SECOND SATURDAY OF EACH MONTH (EXCEPT FOR JUNE & DECEMBER) AT 1:30 pm IN ROOM 101 - MAJORICA ROOM, CASA DEL PRADO, BALBOA PARK. COME EARLY FOR PLANT, CONTAINER & SUPPLY SALES AND SOCIALIZING. BOARD MEETINGS ARE HELD AT NOON PRIOR TO GENERAL MEETING.

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We have two new publicity committee members: Kay Quijada and Tom DeMerritt, who will organize and inform various publications (newspapers, magazines, radio, etc.) of our meetings and special events. If you would like to assist, please get in touch with one of these two!

A fax number is now available for your articles and comments, please call Joyce or Michael @ 619-222-3216 for number.

A very special thank you to Dylan Hannon and Phyllis Flechsig for their excellent articles and presentations in February. As you may have noticed we had many guests at our February meeting; we were very proud to have such quality presentations to share with them! The amount of time it takes to research and write a good article and then to transport plant specimens to & from meetings is a tremendous task, well deserving of our accolades. You two were terrific!!

It was nice to see Carol Wujick, Editor of Long Beach C&S Society's "Roadrunner", Woody Minnich of Cactus Data Plants, and Chuck Everson & Jerry Williams from Rainbow Gardens. Thanks to Woody for judging our brag table plants and a great big THANK YOU to all who brought their special plants.

For the Natural History Bibliophile: A real treat - call or write Patricia Ledlie Bookseller, Inc., # 1 Bean Road, P.O. Box 90, Buckfield, Maine 04220, phone /fax (207) 336-2778 for the most complete and incredible Natural History Catalog, yet!

.....
THANK YOU MR. MICHAEL CULLEN! WE NOTICE THAT YOU ARE ALWAYS THE LAST ONE TO LEAVE - SWEEPING AND CLEANING UP AFTER ALL OF US! AT EVERY MEETING YOU'RE IN THE BACK TAKING CARE OF THE PLANT SALES TABLE. THIS SOCIETY IS VERY LUCKY TO HAVE SUCH A DEDICATED MEMBER. WE REALLY APPRECIATE YOU!!

** Please note: If your address label is highlighted in yellow - This is your last issue of Espinas y Flores unless you send your 1993 dues to Laura DeMerritt - Treasurer!!!

REFRESHMENT VOLUNTEERS

FOR MARCH



- Lorna Burke
- Curt Hammel
- Anna Cornett
- Millie Richter
- Mary Ann Alexanderson
- Michael & Joyce Buckner
- Ruth Richardson
- Jim & Millie Williams

ABOUT OUR PROGRAM:

THIS IS A GREAT OPPORTUNITY TO MEET NORMAN C. ROBERTS, AUTHOR OF "THE BAJA CALIFORNIA PLANT & FIELD GUIDE". MR. ROBERTS HAS BEEN EXPLORING BAJA FOR HALF A CENTURY, AND HIS INCISIVE COMMENTS ON ITS FLORA, FAUNA, AND HUMAN DEVELOPMENT ARE BOTH ENTERTAINING AND EDUCATIONAL.

GELIN ROBERTS WRITES, "THIS IS A BOOK ABOUT THE PLANTS OF A REGION OF MY COUNTRY. IT LEAVE UNSAID THE STORY OF ONE MAN'S LOVE FOR BAJA CALIFORNIA, MEXICO. NORMAN ROBERTS HAD MADE A SUCCESSFUL CAREER AS AN INVESTMENT COUNSELOR, (previously he was a Veterinarlan, ed) BUT HIS REAL INTEREST IS NATURAL SCIENCE. HE WILL DRIVE OR WALK FOR HOURS OR DAYS IN SEARCH OF A UNIQUE OR DISTANT PLANT AND BE DEEPLY MOVED WHEN HE AT LAST FINDS IT."

WE WILL HAVE AVAILABLE FOR YOUR PURCHASE, MR. ROBERT'S PLANT FIELD GUIDE ... SO COME EARLY AND STAY LATE!

BUS TRIPS FOR 1993. WHATDAYATHINK????

- A) THE LIVING DESERT: This wonderful bus drive through the Anza Borrego's wildflower show to The Living Desert was completely filled last year - with all the blooms we should be getting this year we may need two buses!
- B) MADAME GHANNA WELSKA'S ESTATE in Santa Barbara - This would be a leave very early in the morning trip - we can rent a very nice air-conditioned van which would comfortable fit 10-12 people.
- C) The SHERMAN FOUNDATION BOTANICAL GARDENS and the RANCHO SANTA ANNA BOTANICAL GARDENS - We could visit both of these in the same day.
- D) UNIVERSITY OF CALIFORNIA IRVINE ARBORETUM - We could also probably take in a couple of Orange County Nurseries on this expedition.
- E) Your suggestions? Would you be interested in doing the Huntington Botanical Gardens trip or the Tri-City Show at the Los Angeles Arboretum again this year?

SIGN UP SHEETS FOR LIVING DESERT WILL BE AT NEXT MEETING

DEADLINE FOR APRIL ESPINAS y FLORES IS TUESDAY MARCH 23RD.

We look forward to Cactus of the Month: *Echinofossulocactus* (the old stenos) by Marylyn Henderson and some odd *Mesems*, *Titanopsis*, & *Aloinopsis* by Joseph Betzler. Please send us you likes, dislikes, questions, poetry, art, comments etc. We still are seeking some volunteers for Cactus-of-the-Month in later part of the year - please contact Phyllis Flechsig and /or Beverly Kirkegaard. DON'T BE SHY! NOW WE NEED YOUR PARTICIPATION!!!



WELCOME

WELCOME NEW MEMBERS:

LEE & JOAN RAYMOND
MARSHA METTLER
CHARLES DAVIS
CHRIS JENSEN
ANNE STEWART
PAUL & MARGIE OLSZEWSKI
JEFF MOORE
(Solana Succulents Nursery)
SHAWN & XENIA MOORE
SUSAN HOPKINS
DERITH HUGHS

SAN DIEGO CACTUS & SUCCULENT SOCIETY PROFESSIONAL AFFILIATIONS: (contributions and/or active participation)

Quail Botanical Gardens Foundation, Inc.
San Diego Botanical Garden Foundation
San Diego Floral Association, Inc.
Cactus and Succulent Society of America, Inc.
The Living Desert Botanical and Zoological Park
Anza Borrego Desert Association
Huntington Botanical Gardens
San Diego Zoo & Wild Animal Park - Baja Hill
Balboa Park - Desert Garden
San Diego Natural History Museum
The Nature Conservancy
Succulent Society of South Africa
International Organization for Succulent Plant Study (IOS)

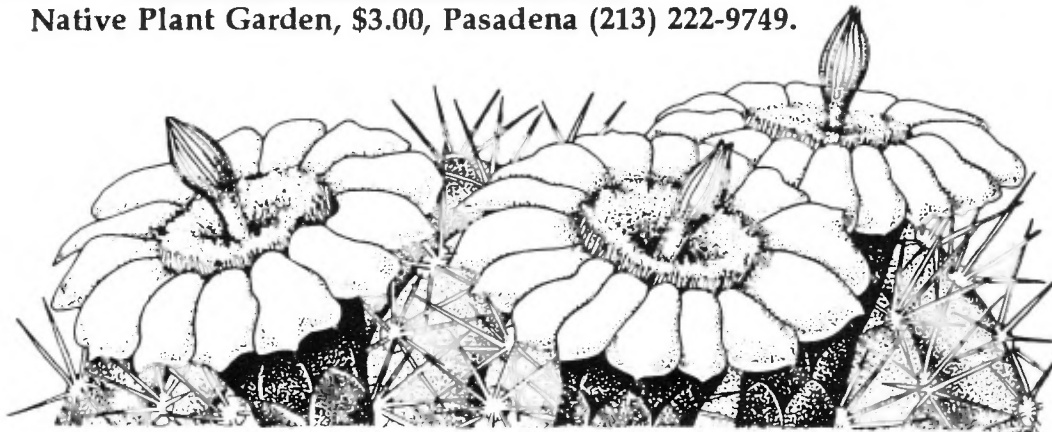
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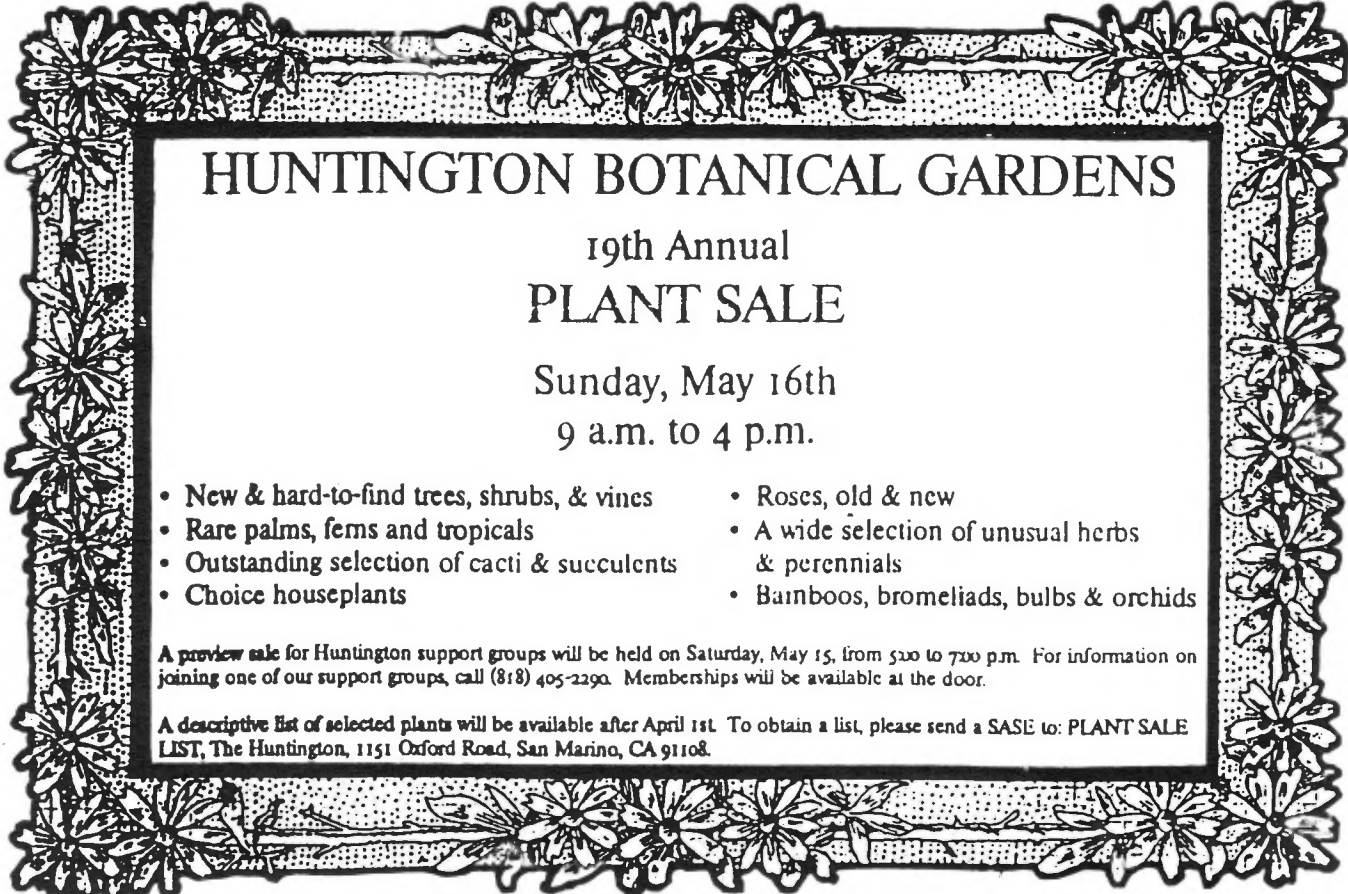
The officers and board of directors of your society have unanimously voted to become associates of the IOS, the International Organization for Succulent Plant Study. Articles about this important conservation and research organization will appear in future newsletters.

CALENDAR OF EVENTS

MARCH BOTANICAL EVENT CALENDAR

- Mar 2-27: Erik Gronborg "A Civilized Garden: Art and Nature" at the Kruglak Gallery, Mira Costa College - (619) 757-2121 ext #594 for more information.
- Mar 4: The Huntington, first Thursday Garden talk and plant sale, "In search of Bromeliads", 2:30 pm - Free - (818)405-2141.
- Mar 6: U.C. IRVINE ARBORETUM - South African Bulb Collection Show and Annual Spring Open House \$5.00 - (714) 856-5833.
- Mar 6-7: S.D. DAYTIME AFRICAN VIOLET SOCIETY, 12th Annual Show @ Casa del Prado - Balboa Park, Sat: 1-5 pm and Sun 10 am to 4 pm - Free!
- Mar 6-7: DESCANSO GARDENS, Daffodil Show, La Canada, Flintridge \$3.00 (818) 952-4400
- Mar 12-14: S.D. COUNTY ORCHID SOCIETY, 47th Spring Show @ The Scottish Rite Center in Mission Valley - (619) 295-2951.
- Mar 13: EAGLE CANYON OPENING AT THE LIVING DESERT - 10:00 am Ribbon Cutting, tickets and info: (619) 346-5694 - Palm Desert.
- Mar 13-14: SOUTH COAST BOTANICAL GARDEN - African Violet Show, Palos Verdes Peninsula - \$3.00 for info: (310)544-6815.
- Mar 19-21: SANTA BARBARA INTERNATIONAL ORCHID SHOW - 48th Annual Show, one of the largest orchid shows in USA, @ Earl Warren Showgrounds \$3.00 - \$6.00, call (805) 967-6331.
- Mar 20: HUNTINGTON BOTANICAL GARDENS SYMPOSIUM "Preserving a Heritage of Horticultural Diversity" - *8:30 am to 5:30 pm, seven speakers, \$65.00 registration, for info call (818)405-2160.
- Mar 20: AMERICAN BAMBOO SOCIETY SALE @ Quail Botanical Gardens in Encinitas - over 75 kinds available - (619) 454-0334
- Mar 20-21: SOUTH COAST BOTANIC GARDEN, Annual Standard Flower Show, \$3.00 call (310)544-6815.
- Mar 20-21: DESCANSO GARDENS FLOWER SHOW, (818) 952-4400
- Mar 27-28: SOUTH COAST CACTUS AND SUCCULENT SOCIETY, Show & Sale @ South Coast Botanic Gardens on Crenshaw on the Palos Verdes Peninsula. Contact Ed Hancock @ (310)375-3410 or Jim Hanna @ (310) 920-3046.
- Mar 27: U.C. COOPERATIVE EXTENSION - Home Gardening Seminar, 8:00 am to 4:00 pm, pre-register by 3/19. \$22.00 call (619) 694-2845.
- Mar 27: SANTA BARBARA BOTANIC GARDEN - Wildflower Day and Plant Sale - \$3.00, call (805)682-4726.
- Mar 27: EARTHSIDE NATURE CENTER "Wildflower Walkabout" - two acre Native Plant Garden, \$3.00, Pasadena (213) 222-9749.





HUNTINGTON BOTANICAL GARDENS

19th Annual PLANT SALE

Sunday, May 16th
9 a.m. to 4 p.m.

- New & hard-to-find trees, shrubs, & vines
- Rare palms, ferns and tropicals
- Outstanding selection of cacti & succulents
- Choice houseplants
- Roses, old & new
- A wide selection of unusual herbs & perennials
- Bamboos, bromeliads, bulbs & orchids

A preview sale for Huntington support groups will be held on Saturday, May 15, from 5:00 to 7:00 p.m. For information on joining one of our support groups, call (818) 405-2290. Memberships will be available at the door.

A descriptive list of selected plants will be available after April 1st. To obtain a list, please send a SASE to: PLANT SALE LIST, The Huntington, 1151 Oxford Road, San Marino, CA 91108.

Just turn last month's back page puzzle upside down to discover the familiar figure: a puppy!

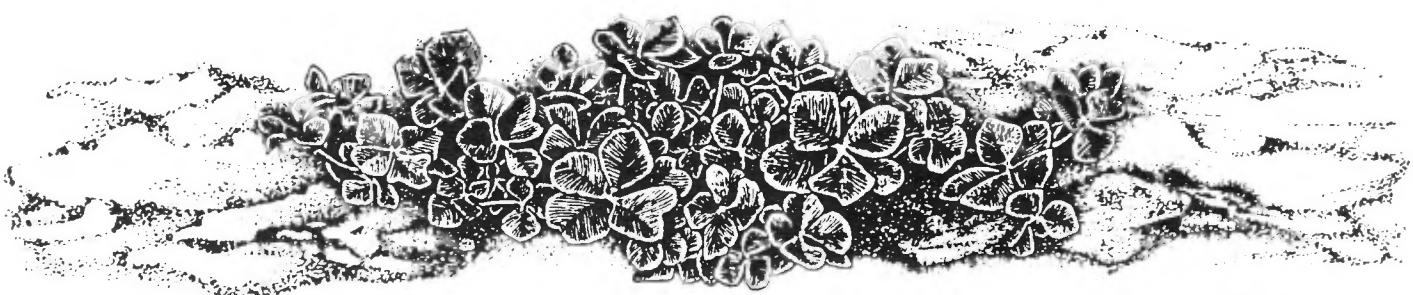
San Diego Cactus & Succulent Society Badges are available - please inquire of Mrs. Laura DeMerritt - minimal cost - maximum effect!

Remember, bring a friend. Have someone you want to receive an Espinas y Flores? Let us know we'll send them one.

Me, a provender? Yes!! If you can't remember the last time you brought goodies for our refreshment break, then please help us out provide for the enjoyment of others as others have provided for you!

BRAG TABLE WINNERS:

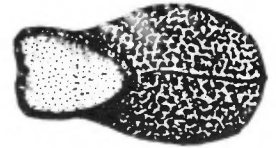
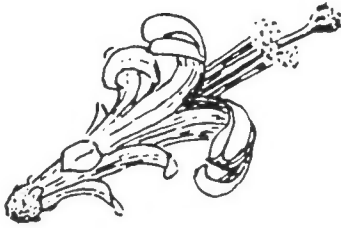
- First Place: Dylan Hannon's *Othonna cacalioides*
 Second Place: Phyllis Flechsig's pristine *Echeveria lauii*
 Third Place (tie): Kay Quijada's *Euphorbia stellata*
 Joyce Buckner's bonsai *Euphorbia misera*



COCHEMIA

CACTUS OF THE MONTH

By Joe Clements



The type plant (*Cochemia halei*) was discovered in Baja California in 1889 by T.S. Brandegee. Brandegee named the species after J.P. Hale, who assisted him with its discovery.

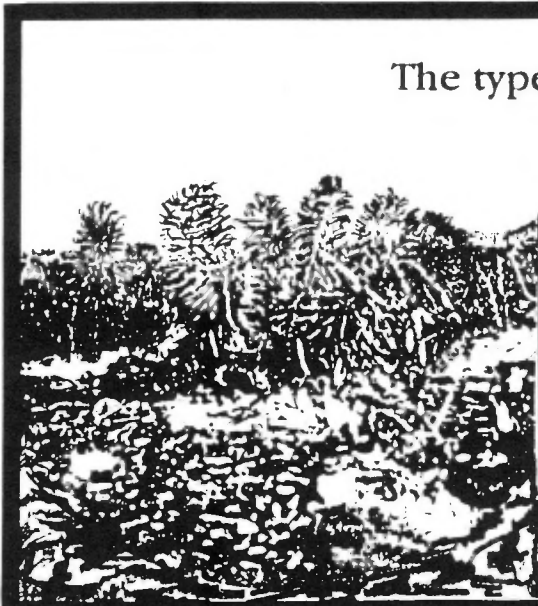
For these plants with long-tubed bright red flowers Mrs. Kathrine Brandegee termed the name Cochemia as a sub-genus of Mammillaria in the publication Erythea(1897). She named Cochemia for the Cochemie Indians, early inhabitants of Baja California. Walton in 1899 then raised Cochemia to the rank of Genus.

Other discoveries followed including *C. pondii* (1889); *C. setispinus* (1897); *C. poselgeri* (1891); and *C. maritima* (1937). During this time many of the authors who discovered these species retained the name Mammillaria for their generic epithets.

Cochemia will always be closely related to Mammillaria. Today many botanists including David Hunt place this group as a sub-genus under Mammillaria. Although some regard Cochemia as a good genus in its own right. It doesn't matter whether you think that they belong to the genus Mammillaria or Cochemia for they still have the same glorious, long-tubed scarlet flowers and bright red fruits worthy of cultivation. Since there are only five species in this group all are well worth growing. All species need plenty of light and some protection from the winter cold.

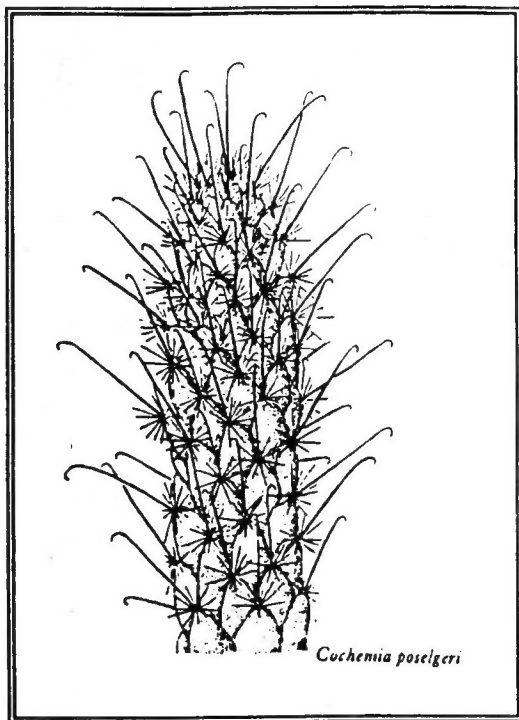
Cochemia halei (Brandegee) Walton is a large clump forming type of the sub-genus Cochemia. It is the only Cochemia of the five species without hooked spines. Originally it was collected near Magdalena by Brandegee in 1889. Today it is probably the rarest Cochemia in cultivation. Below is a reprint of the original picture and text of that California Academy of Science Publication by Brandegee. Note the Mammillaria sp. also listed above. This may be an earlier listing of Cochemia setispina due to the location listed and the clumping nature of the plant.

The type plant *Cochemia halei*



MAMILLARIA HALEI. Cæspitose, stems 8-10, about a foot high, 2-3 inches in diameter, straight, covered with dark-colored straight spines: tubercles short, rounded, woolly in the axils: spines 15-25, one-half inch long, with 3-4 of the interior ones stouter and an inch long: flowers an inch long, vertical from the axils of young tubercles, scarlet: sepals all scarlet, petaloid: anthers scarlet, filaments exserted yellowish, stigma scarlet: fruit red, clavate, one-half inch long: seeds smooth.—A handsome species, seen only upon Magdalena and Santa Margarita Islands, where it is very abundant.

CACTUS OF THE MONTH



Cochemia pondii (Greene) Walton. David Hunt combines *M.(C) setispinus* and *M. (C) maritima* to *Mammillaria pondii* and truly they are very similar, forming large clumps with stems to 12 inches tall. Pondii is heavily spined with 20 to 30 radial spines and 4 to 5 centrals that are hooked. Flowers are bright red tubes with stamens and style exerted. As with other members of this group the fruits are globular berries with black seeds. The habitat of this *Cochemia* is Cedros Island where it is found in great abundance.

Mammillaria setispinus (Coulter) Englemann The most common species in cultivation. Clumps in the wild can be exceedingly large, often to several meters. It does stand out with its white spines that are black-tipped and hooked. To see this one you need to travel down the road to Mission San Borja or to the Cave Paintings where it can be found nearby.

Mammillaria (Cochemia) maritima (Lindsay) Hunt. Similar to *setispinus* but with reddish brown spines. Clumps can be quite large up to one meter with stems

three inches in diameter. Central spines are four in number with the lowest one being hooked. *Mammillaria maritima* can be found along the Baja Coast from Punta Blanca to Santa Rosalita.

Mammillaria (Cochemia) poseigeri Hildmann is quite common in cultivation as plants and seeds are readily available. Seedlings can grow easily and rapidly to flowering size. In habitat it makes clusters of cylindrical stems to six feet, branching from the base, often pendulous from the rocks. Axils are wooly and rarely with bristles giving an open appearance to the stems. Tubercles have only one central hooked spine. Flowers are large and scarlet with stamens exposed.

References:

Brandege, T.S. (1889) A Collection of Plants From Baja California. Proceedings of the California Academy of Science. p.161.

Brandege, Kathrine (1897) Notes on Cactae. Erythea. p. 111-123.

Hunt, D.R. (1973-1974) Review of *Mammillaria* Names in Current Usage. *Mammillaria Soc. Journal*. v.13 60-61. v. 14, 25-26.

Hunt, D.R. (1981) Revised Classified List of the Genus *Mammillaria*. *CSJGB*. v.43 (2/3) p.41-48.

Pilbeam, John (1981) *Mammillaria a Collectors Guide*. Universe.N.Y.

Pilbeam, John (1987) *Cacti for the Connoisseur*. Timber Press. Portland, Oregon. p.82.

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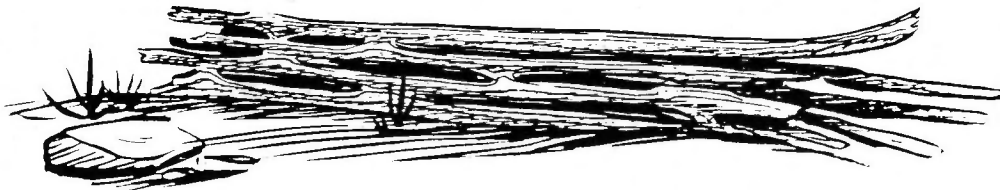
The evolution of succulent plant growth forms is recent in the history of flowering plants. Botanists think that angiosperms (flowering plants) evolved in the lowlands of the early continents. This was during the early Cretaceous period, about 125 million years ago. According to paleobotanist Daniel Axelrod, at this time the gymnosperms (cone bearing plants) occupied the tropical lowland basins. Flowering plants evolved at the fringes of these basins. Evolution usually takes place at the margins of the extreme edges of favorable areas. Within a short time (5 million years), angiosperms were the dominant plant form and had displaced most of their gymnosperm relatives in the low lying tropical basins. This was the time of Gondwanaland, when the continents were in different positions than they are today. The temperatures were warmer and more uniform. Tropical plants were found much farther north than today. About 65 million years ago, the start of the Tertiary period, floristic communities of the modern era were taking shape. While many different families were coalescing worldwide, three major floras were forming in North America. These three geofloras include: The Neotropical-Tertiary, Arcto-Tertiary and Madro-Tertiary. The Madro-Tertiary Geoflora was the hotbed that spawned our southwest succulent plants.

In the southwest United States the Madro-Tertiary Geoflora grew in the most favorable habitats. Along the extreme edges of the favorable habitat, the margin, is where new plant forms evolved. The challenge of aridity is a powerful selective force. Plants able to grow in regions that suffer drought are often profoundly different from their ancestors. When drought tolerant plants finally got a start, previously uninhabitable areas were open to colonization.

There are several ways to avoid drought though not all of them lead directly to succulent growth forms.

Three basic growth forms that evade drought are as follows:

The first is a very short life cycle. Growth starts soon after the first rains. These plants mature very fast. Seed is set soon after flowering and the plant dies. Most of us are familiar with the pretty annual wild flowers and many 'weedy' species. There are several succulents that grow like this. We have small succulent Crassulas in San Diego County with this life cycle.



LIFE ON THE FRINGE: COLONIZING THE MARGINS OF THE EXTREMES

The second is an annual above ground part that dies back each year to an underground storage organ (bulb or tuber). There are many examples of these geophytes (ground loving plants) in our collections. Pelargonium, Othonna and many cucurbits, all have members fitting this description. When the conditions are favorable the underground stem sends up a shoot or leaf. Flowers than seeds are produced thus completing the life cycle. The part below ground is perennial and is usually quite long lived. In our collections these tubers are often raised above ground.

The last group can be into two categories:

The first category is Herbaceous perennial shrubs: herbs and trees that have special adaptations of dormancy and morphology that assist their survival in inhospitable areas. Smoke Tree, Desert Mallow, and Ironwood are common plants which exhibit these adaptations.

The last category include plants that store water in leaves, stems or roots. Typically these are the cacti and succulents that we are familiar with. There are spiny Opuntias, fat-stemmed succulents (pachycauls) like elephant trees and the large leafed Dudleyas of our hillsides.

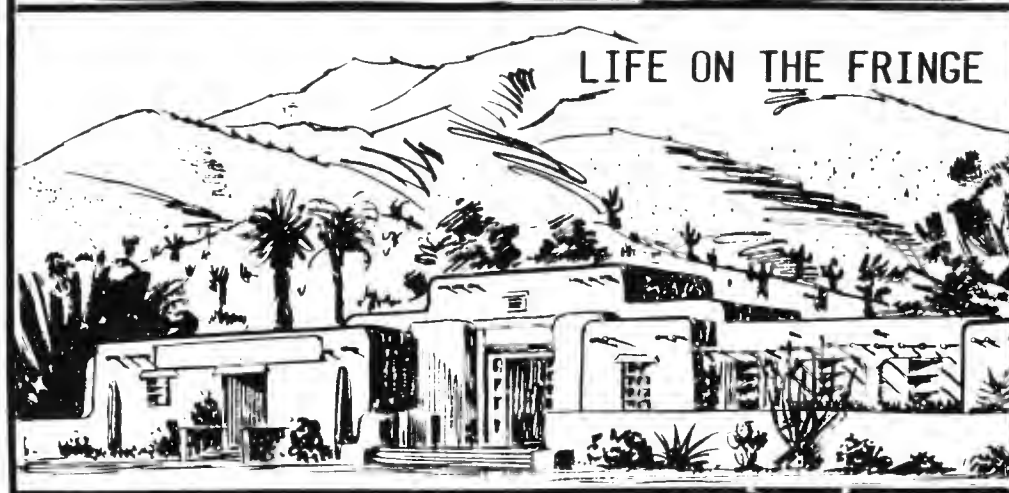
Succulents appear throughout the world and in most plant families. Orchids, the largest plant family, are mostly succulent in nature and can be found on every major continent except Antarctica. Cacti may have developed in the North American continent, but now they are found throughout the Americas. Crassulas are pandemic (worldwide distribution) as are the Euphorbias. Some of these succulents are even reinvading the tropical regions, as seen in the epiphytic cacti.

Many succulent plants are opportunistic and take advantage of moisture whenever it is available. Most of the plants that are grown in pots adapt quite well to our horticultural practices. We give them water in the warm parts of the year and let them rest when it is cool. In southern California many growers get away with year round growing. Some plants cannot be grown in this manner.

Plants that have to take a rest, need a dormant period. These plants evolved in a region with seasonal periods of drought. The genetic component of the plant is tied to some environmental condition: day length, cold or heat are a few possibilities that can trigger dormancy. Most of us are aware of trees that become deciduous in the winter. Many succulents act in this fashion. We do not have much trouble growing winter dormant succulents; Baobab, Cyphostemma and Adenium grow like this.

COLONIZING THE MARGINS OF THE EXTREMES

HOW THE WASTELANDS WERE FORMED



Succulents that shut down their growth cycles during the hottest part of the year give plant enthusiasts the most trouble. Many times they are trouble because a lack of understanding. These plants need a winter growing period and a real summer dormant stage. Flowering usually occurs between the beginning or end of the growing season. Most of the good examples of summer dormant plants are from Africa. Many members of the Mesembryanthemaceae fall into this group: Monilaria looks dead most of the year, yet without water it will start to grow in the late fall. Conophytum and Lithops are famous for their growth forms but they too have specific dormancy periods. Any of these three genera have definite summer dormancy; water will interrupt their dormancy. In this condition bacteria or fungi can enter the plant body and destroy it. Two other genera, Ruschia and Mitrophyllum seem to be unaffected by water in their dormant periods, though they will not grow. Other mesembs seem quite content to grow in whenever water is available.

Many of the African Cotyledon and allied genera, members of the Crassulaceae, are summer deciduous and grow in the winter. Tylecodon paniculatus (Cotyledon paniculata) is perhaps the most common. The flowers start after the end of the growing season. As the leaves start to fall from the plant the flowers are in their full glory.

Othonna in the Compositae and Pelargonium in the Geraniaceae, are mostly winter growing genera. Both of these are also southern african in origin. In the yam family (Dioscoreaceae) Dioscorea elephantipes, a winter growing vine is much prized.

Culture of succulent plants can be quite exasperating, especially when it comes to watering. Probably the most important item to remember is "When in doubt, don't water.". Remember these are succulent plants, they have evolved the ability to withstand drought. Observe your plants and look for signs of growth or dormancy. Some plants must have a definite rest, others are easy and grow whenever water is available. These few easy ones have spoiled it for dormancy dependent plants.

Bibliography -

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- Raven P. H. et al., 1976. Biology of Plants.
- Rowley, G., 1978. The Illustrated Encyclopedia of Succulents
- Storms, E., 1976. Growing the Mesembs.
- Tolken, H. R., 1985. Flora of Southern Africa: Crassulaceae, Vol. 14

PLEASE BRING IN PLANTS THAT ARE GROWING OR DORMANT
ALL PLANT FAMILIES WELCOME - NO PREFERENTIAL TREATMENT HERE !!

MY HOME SECURITY SYSTEM
by Brunhilde Scheffler

*There is a peculiar fence
Around my house.
It greens, it flowers,
And it stings.
If a burglar wants to browse
For open window, unlocked doors,
He has to tackle all these things.*

*They keep the guard
Around my yard.
They are my prickly Cacti friends.
I won't be lonely,
Their spines touch my hands,
But it's in friendship only.*

*Below my windows all around
Their presence does abound.
They will defend their mistress
And her dwelling.
(Don't need to do alot of yelling.)
They'd rather sting and burn
Or even poison
And to keep them happy -
I just moisten.*



MARCH MAINTENANCE

With Spring and the increasing day length, warmth, and light intensity (Vernal Equinox, March 20th) the Winter dormant plants begin to "wake-up", the onset of a new growth period. Most all cacti should cautiously be watered, perhaps misted, watch for the signs of new growth or dehydration and spray or water on sunny days. Most all other succulents begin a growing phase at this time, especially as April approaches. Watering can cautiously begin depending on the weather and the night time low temperatures if plants are not in a greenhouse or otherwise protected. Remember that shade-screen protected plants have been protected from direct sun; never move a plant from a shady location and place it in full sun. Sun burning damages the epidermis of plants irreparably. Provide light shading especially at midday to acclimatize the plants from the solar radiation.

Many bulbs are now showing new growth and should be encouraged with a complete well balanced fertilizer.

Cacti can be re-potted now and this gives you the opportunity to examine your collection for pests, especially root mealy and root rot. Take proper measures with pests utilizing the safest, most biodegradable method possible. Often, insecticidal soap and/or hot water immersion can do wonders without any damage to plant or environment. Experiment cautiously and ask other growers and society members how they deal with these problems. Good growing!! Michael

"I, er, you know..." "Well, uh, well..."

TEST YOUR SUCCULENT SAVVY

A Quiz by Michael Buckner

- 1) There are only two families composed wholly of Succulents: the *Cactaceae* and the _____. (12 letters)
- 2) Glochids only appear in one genera of cacti, which genus? (7 letters)
- 3) A phenomena confined almost exclusively to succulent plants and involving fixation of Carbon Dioxide (CO₂) at night time instead of daytime is called _____ (three words) or abbreviated (three letters).
- 4) The best position for you backyard greenhouse at this Southern California latitude should be:
 - (A) North to South
 - (B) East to West
- 5) The small-leaved Bursera which is perhaps the most Xeromorphic of all the the *Burseras* thrives in the extremely arid desert hills and mountain slopes of Baja California, Sonora, and some Southwestern American States is *Bursera* _____. (11 letters)
- 6) Our native Californian Fan Palm was named for George Washington: *Washingtonia filifera*. The native Arizona (and California) Saguaro genus was named in honor of another great American, namely _____. (8 letters)
- 7) The most lilliputian of all genera of Cactus is usually considered to be _____. (11 letters)
- 8) Cacti like corn, tobacco, and chocolate are only naturally indigenous to the New World. True or False?
- 9) A species is to a genus as a:
 - (A) Son is to a father.
 - (B) Mother is to Germain Greer.
 - (C) *Simpsonii* is to a *Pediocactus*.
 - (D) *Astroloba* is to an *Apicra*.
- 10) Utilizing syllogistic logic deduce the most correct answer:
If all Lumpers are arm-chair Botanists and all arm-chair Botanists are Imbibers with splitting headaches, then:
 - (A) All lumpers are splitters.
 - (B) All splitters are headaches.
 - (C) All of the above.
 - (D) None of the above.

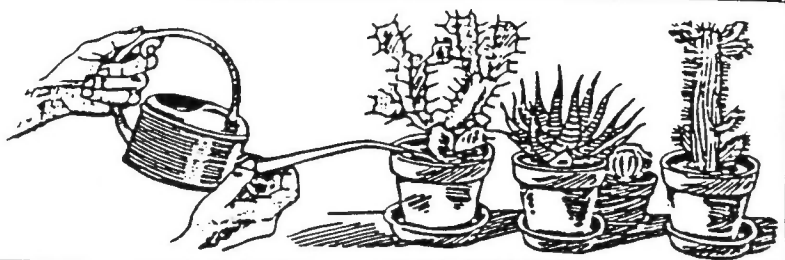
Answers next month!

"Hmmm..."

"Gee, uh..."



FROM ALL CORNERS
by Shirley Berry



Put this in the "Seems Crazy but it Works" file: Our succulents which are for the most part drought resistant and normally expire with too much water these can be grown in WATER?

In the A.S.P.S Journal of March-April 1976, Harry Mays has some interesting observations on water culture with succulent plants. He states, "..... instinctively we assume that it is alien and suicidal to grow plants which, by their very nature, are adapted to grow with relatively very little water, in a medium consisting entirely of water."

He says he has seen a whole collection of cacti and other succulents which had been grown by water culture for several years by a Belgian collector. "The plants were healthy, many quite large, with no signs of rot. They were potted in Argex, a manufactured product which can best be described as cinder shaped into balls from a few millimeters to a few centimeters in diameter with a smooth coating which has many holes. The cinder itself has many large holes and it is light, inert, and capable of soaking up water like a sponge. The pots are stood in trays which contain nutrient solution and are topped up from time to time. Topping up is not always done with solution because if this were done salts would eventually build up to a dangerous level. From time to time ordinary water is passed through the pots from the top to wash away any excess salts and periodically the trays are cleaned out and refilled with fresh solution. A nutrient solution can be made with any well balanced fertilizer which is low in nitrogen and which contains trace elements. In winter, the Argex is allowed to dry out."

Mr. Mays goes on to say, "Rooting some succulent plants directly in a nutrient solution is possible and indeed conducive to rapid root development. The 6 cm of a cutting of *Dorstenia hildebrandtii* was placed in a solution toward the end of August 1975. By the end of September a short but reasonable root system had developed and the cutting had shed hardly any leaves and flowers. The weather during the period was changeable and quite cool at times. The rooted cutting was transferred to my normal peat /grit compost in early October."

Additional experiments were done with *Echeveria* cuttings, *Melocactus*, *Neoporteria* and other cacti. Cycad seeds are large and hard and slow to germinate, but by regulating the temperature as well as the depth of the solution covering seeds, he was able to develop a root. He concludes that it is possible to germinate seed and to root and grow succulents by water culture," ... but no one should assume from this article that all succulents can be grown satisfactorily in this way."

I have personally seen, to my amazement, a well rooted *Crassula argentea* growing in a vase of water. Can we have someone who is interested report on their experiments in this direction?

*Editor's note: We have seen cuttings of *Fouquieria splendens* (Ocotillo) rooted in water! Any others?

"A remarkable account of the longevity of a specimen of *Sarcocaulon patersonii* was recorded by Werdermann (1932). This plant (the Bushman's Candle, ed.) was sent to Gilg by the collector Hermann in 1886. After it had been lying in the glass case for 10 years, Gilg exhibited the plant at the Berlin exhibition of 1896 where, because it lay in damp surroundings, it suddenly started to grow and by the end of the exhibition had produced vigorous shoots up to 10cm long."

--THE GENUS SARCOCAULON OF SOUTHERN AFRICA by Rodney Moffett, Nat.C&S J.,Vol. 36/3

"The career of Paul Watson, known to some as "the most famous eco-radical in the world," illustrates how easily nonviolent witnessing can slip over to direct and violent action after one accepts non-human rights. A Canadian, born in 1951, Watson joined in Earth Day protests in 1970 as well as in the anti-nuclear and Indian-rights movements. He participated in the formation of Greenpeace and in the mid-1970s led the open-ocean demonstrations against Russian whalers. In 1976 and 1977 Watson picked up the work of Cleveland Amory and Brian Davies and turned his attention to Canada's annual hunt of harp seals on the ice floes off Labrador. Using helicopters, Watson and the Greenpeace team observed and photographed seal pups being skinned alive in front of their distressed mothers. Their initial response was to spray dye on the pups to make their coats valueless to the sealers. But as the slaughter continued Watson resorted to covering pups with his body to protect them from clubbing. He also handcuffed himself to a winch cable used to lift the pelts to the factory ship. The sealers retaliated by dousing Watson in the icy waters, dragging him through piles of seal carcasses and eventually leaving him, unconscious and near death, on the ice. He recovered in a hospital only to find that he had been voted out of Greenpeace for violating Canadian laws regarding the seal hunt and allegedly engaging in violent activities. Watson did not deny the charge that he had become a "vigilante," only replying that "it takes outlaws to stop outlaws." He would, he vowed, continue to "defy authority whenever I considered it wrong -- and whenever its policies worked against sea mammals."

-From THE RIGHTS OF NATURE - A History of Environmental Ethics by Roderick Frazier Nash, University of Wisconsin Press, c.1989

"MEXICO CITY: "Please alert your readers that because of efforts by the government to reduce pollution levels in Mexico City, every car within the city limits must remain parked for several days of each week. The days in which a car may not be driven are determined by the last number on the license plate. There are no exceptions.

A second problem in Mexico City is caused by the still-corrupt police force (ditto, Tijuana, ed.). When we were there after Christmas, we were pulled over twice. In neither instance did the police wear identifying badges or show identification. They did not write our tickets; we were simply told the fine was \$300, payable immediately, in cash. Only the kindness of a passing Mexican who was willing to argue and who bribed the policeman saved us from the first extortion attempt. We were not so lucky the second time."

--Lucie Forbes, Tucson,AZ - from Sunday Feb 22 edition of S.D. Union-Tribune Travel Section

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The San Diego Cactus and Succulent Society, Incorporated is open to all persons interested in growing cacti or other succulent and exotic plants. Meetings are held the second Saturday of each month at 1:30 P.M. in Room 101, Casa del Prado, Balboa Park. Board of Directors meetings are held at 12:00 P.M. prior to general meetings. Annual dues are \$10 per single member per year, and \$5 for each additional member of same household. Single copies of Espinas y Flores are \$1 per copy sent within USA. Affiliated with the Cactus and Succulent Society of America, Incorporated.

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