

Espinas y Flores

BULLETIN OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY
Affiliate of the Cactus and Succulent Society of America, Inc.

Volume XXI, Number 8

August 9, 1986

AUGUST MEETING

Saturday, August 9, 1986

Room 101, Casa del Prado, Balboa Park

1:30 p.m.

"OH NO, NOT ANOTHER TRAVELOGUE!"

Jim Dice will present an illustrated account of a 1985 Huntington Botanical Gardens-sponsored expedition to Mexico. Included in this whirlwind tour of eastern and south-central Mexico will be glimpses of the natural vegetation, succulent flora and archaeology of Tamaulipas, Vera Cruz, Puebla and Oaxaca.

FIELD-COLLECTED PLANTS AND THE CSSA SHOW

Jim Dice, CSSA Conservation Committee Chairman, will give a brief presentation at our August Meeting on the motion passed recently by the CSSA Board of Directors, regarding eligibility of field-collected plants in the annual CSSA Show, and the proposition that will appear on this year's CSSA ballot. There will be time for questions and comments from the audience.

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DEADLINE FOR THE SEPTEMBER ISSUE----- AUGUST 30, 1986

Mary

Welcome to new Members - - - -

Jack Percival - San Diego
Mrs. William Hilliard - San Diego
Michael W. Cullen - San Diego
Frances J. Nardi

Joseph Wood - Coronado
Peg Bryant - Coronado
Charles (Carl) J. Kykema - San Diego
Maurice & Ree Miller

Want to Thank Rudy Lime for donating plants for the auction at the picnic.

Bragging Plants winners for July are:

- 1st Jerry Brattmiller for his Pachypodium Baronii v Baronii
 - 2nd Phyllis Flechsig for her Decarya madagascariensis
 - 3rd Ethel Standish for her Opuntia albispina
-

Those who have volunteered to bring refreshments for August are:

Susan Clements	Ruth Richardson	Millie Richter	
Donna Couchman	Jeanette Dutton	Marylyn Harms	
Wayne Zaranka	Frances Johnson	Verna Pasek	
Mary Ann Alexanderson	Reed Pierce	Ethel Standish	Thanks

Personals:

MUST SELL - MOVING 200 Beautiful specimens of Cactii and Succulents
Dr. William Stewart Please call 575-5146 Leave message if Dr. Stewart isn't home.

A repeat

Joseph Wood is looking for a building to rent to set up his woodworking business. He needs a minimum of 700 sq. feet (would like more. He would like living space at the same site. If you think you might be able to help Please call:

Joseph Wood 435-4634

SHOW SCHEDULE FOR AUGUST AND SEPTEMBER

Aug. 16 & 17	San Diego Fern Show	Sat: 1pm-5:00pm Sun: 10am-5:00pm
Aug. 23 & 24	San Diego Gesneriad Show	Sat:12pm-5:00pm Sun 10am-5:00pm
Aug. 30 & 31	San Diego Turtle & Tortoise Show	Sat & Sun 10:00 - 5:00pm
Sept 6 & 7	San Diego Professional Horticulturists	Sat:10am-5pm Sun: 10am-4:30pm

Cacti-of-the-Month

PLATYOPUNTIAS

by Rick Latimer

When the cactus family is studied, it becomes obvious that some species are closer related to some than to others. Also some groups of similar species (genera) are closer related to some than others. As it turns out, most cacti fall into the subfamily Cereoideae which includes those genera and their species that exhibit no leaves (except as seedlings), small seeds (relative to the next two subfamilies), no glochids, and shapes that are mostly spherical or columnar. This column is usually devoted to one of these type. This group is also considered "more advanced". In contrast to those species, there are the members of the smallest subfamily Pereskioideae (which is considered to be the "most primitive" subfamily) with species that exhibit large leaves (deciduous), large seeds (with soft shells), no glochids, and shapes that look like noncactus vines, shrubs, or trees. The other subfamily Opuntioideae, has species some of which have (usually small and ephemeral) leaves on new growth, fairly large and hard seeds, YES GLOCHIDS!, and shapes that are mostly either "pine cone"like (Tephrocactus), cylindrical ("cholla"), or flat disks (rather unique really) as seen in this month's genera of the month: Opuntia, Consolea, Nopalea, and Brasiliopuntia.

The most obvious distinguishing feature separating the "platyopuntias" from the other cacti is the flattened photosynthetic stem also called a "cladode". Plants have two types of growth: indeterminate or determinate. With the first type, a plant grows as long as the environmental conditions are favorable and cease when they are not. Plants of this type usually exhibit stems with a more or less continuous shape. The other type produces discrete growth shapes such as the platyopuntia cladodes. A cladode arises from a dormant one and grows rapidly. Within a week or two all the leaves and areoles of the new shoot have been formed, after which the new joint enlarges, fills up, and "becomes set in concrete". Changing environmental conditions has little effect upon this new shoot. If environmental conditions remain favorable, an entire new cladode is formed, but the original "new" one does not grow larger than is typical of a particular species. A thick, strong cladode is necessary to have giant species. In the Opuntioideae, the cylindrical species tend to be relatively short plants, while there are several tree platyopuntias such as O. echios of the Galapagos. Studies by P. Nobel indicate that plants in environments with winter rainfall tend to have terminal, unshaded cladodes that face in a north-south orientation (so the plants could take advantage of the lowness of the sun in the winter sky), while those plants (usually in cultivated environments) that grow throughout the year exhibit an east-west orientation (then both sides of the pads may get sufficient sunlight during the growing period).

In Opuntia there are two types of spines: thin, sharp, needle-like persistent spines and short, deciduous, barbed GLOCHIDS. Glochids are those (if you did not already know first hand!) nasty, irritating-almost invisible when in your skin-pests that are the opuntias way of saying "To know me is not to love me!". (However I consider the sheathed cholla spine infinitely worse!) These two types of spines may or may not both

be found in the areole together depending upon the species or variety. Variability in spine development is apparent in a highly variable species such as O. violacea from southwestern US and nearby states of Mexico. O. violacea var. violacea has spines that are mostly restricted to the upper half of the pad, where one long central spine may reach 3 inches long and shorter spines and glochids also reside in the areoles. O. v.-gosseliniana has bristly long spines all over the pad. O. v. var. -santa-rita has no persistent spines.

The genus Opuntia has the widest north-south distribution in this plant family. O. fragilis (the "little prickly pear" - with a pad cross section that is circular) grows in its northern limit as far north as the Peace River in British Columbia, Canada all the way down into southern Arizona. O. humifusa (almost alone among the cacti) lives from south western Wisconsin across to Massachusetts (the coast of) and all the way into Texas and across to Florida. The most southerly of the platyopuntias is quite a ways north (in Argentina) of other Opuntioideae habitats (such as Tephrocactus). Of the several native San Diego County species O. basilaris (with its magenta flowers and bluish pads) is probably the most favorite. It ranges at least as far north as Mt. Whitney (where a dwarfish, pink flowered var. whitneyana grows and sometimes is seen with white flowers), east across Nevada and into southwestern Utah (where var. aurea with yellow flowers grows), and south into Arizona and into Sonora and Baja in Mexico.

The Cactus-of-the-Month this month excludes those members of the genus that are not considered to be "beaver tails" or "prickly pears" such as the "chollas". It includes such "genera" as recognized by Backeberg (but not Benson for example) including Brasiliopuntia, Consolea, and Nopalea. The chollas (subgenus Cylindropuntia) and the prickly pears are distinctive in their extreme forms, but there are transitional species. Usually the initial joint from seed of the prickly pears is cylindrical. With Consolea the main trunks of plants are cylindroid and the side branches are flat. No prickly pear spine has a sheath (paper-like and easily removed) like the chollas, but some chollas only have this on the tip of the spine. The "genus" Nopalea has been defined by the fact that the style and stamens are much longer than the petals (which never seem to open - a hummingbird flower).

*and Brasiliopuntia

REFERENCES:

- Curt Backeberg, Cactus Lexicon.
Lyman Benson, The Cacti of the United States and Canada.
Franz Buxbaum, Morphology of Cacti.
E. Yale Dawson, Cacti of California.
Arthur C. Gibson & Park S. Nobel, The Cactus Primer.

See also:

Joyce Tate, Cactus Cookbook.

Helen Hegyi, "The Edible Fruited Cacti", California Rare Fruit Growers Yearbook (III), 1971 or E. y F. 3-5/72.

Welwitschia mirabilis, Hooker. Fil. (Gard. Chron. 27 Jan 1862)

The name commemorates the great Austrian medic and naturalist, Fredrich Martin Joseph Welwitsch (1806-1872) who described 550 new species of plants as well as 29 different animals. On 3 September 1859 near Cabo Negro, Angola Welwitsch first saw *W. Mirabilis*. He wrote that he was so astonished that he knelt on the hot sand and stared at the plant in bewilderment, thinking that his fantasies had taken flight. He was convinced that he was marveling at one of the world's most inconceivable creations. Charles Darwin described this plant as the "Platypus" of the plant kingdom and J.D. Hooker who named it, regarded it as the most interesting albeit ugliest plant ever brought to Great Britain. What is this weird thing we have on our hands?

Welwitschia belongs to the Gnetales, an order of plants grouped with the naked-seeded gymnosperms which started evolving some 300 million years ago. It is only a foot or two in height with two leaves but they may have a surface area of 200 square feet. The plant somewhat resembles a stranded octopus in one of the most arid deserts of the world and it may live for 2000 years. There is no other plant like it in all the world and yet there has been a running argument about its name for more than 100 years.

W. mirabilis (*mirabilis*=wonderful) or *W. bainesii*? There were two Hookers, J.D. and W.J., a father and son. It's not easy to find which was which, and when I do, I still get them mixed up. So I will call them Hooker 1 and Hooker 2. In the Gardiner's Chronicle of 18, Nov., 1861, *Tumboa bainesii* (Welwitsch suggested the generic name *Tumboa* meaning 'a stump') was published by Hooker 2; however, it was only a provisional name and should have consequently been invalid. Hooker 1, on Jan 27, 1862 published *W. mirabilis* in the Gardiner's Chronicle; then Hooker 2 came back on 27 May 1862 and published *W. bainesii*, and so it goes! At any rate, *W. mirabilis* was the first valid publication. To quote R.A. Dyer; "In accordance with the decision of the standing committee on the stabilization of specific names published in Taxon 24(1), 1975, the specific name *Welwitschia mirabilis* Hooker, fil., takes priority over *W. bainesii* (Hooker. fil.)." The Afrikaans name is *Tweeblaarkanniedood* meaning "two-leaf-cannot-die".

Welwitschia has no close living relative. The nearest relative is a broad leaved coffee-plant-like tropical shrub, *Gnetum*. The next is the desert shrubs known as Mormon, or Mexican Tea of our own deserts (*Ephedra*). However, their relationships are very remote. *Welwitschia* occurs irregularly in the Namib Desert of South West Africa and Angola with an average rainfall of two inches per year, some years none at all. Therefore, growth and reproduction do not occur every year. At the University of Stellenbosch, it took plants grown from seed twenty one years to reproduce. This, under ideal greenhouse conditions, in the Namib it may take ten times that long. Seed germinates in three to ten days with the cotyledons first to appear; then a week or so later the opposing paired leaves are produced. These are the only leaves the plant will ever produce--if they die, so does the plant. In two years or so the cotyledons normally fall off. The two leaves clasp the flattened stem or trunk so that growth occurs along the rim. No matter how big the stem gets, the leaves will keep pace by widening at the base to always surround the stem, growing in length as well as width. They arch upward a foot or so and bend over to touch the ground up to ten feet from the stem where they become frayed, splitting into ribbons. These 'splits' may extend to the base giving the impression of more than two leaves. As the wind whips the ends back and forth, the tips die and fall off while the leaf keeps growing in length.

Welwitschia is not a true succulent and it's not even truly xerophytic because most xerophytes have reduced their leaf surface while this plant has a tremendous leaf surface. One plant recorded had 180 square feet of surface area with millions of stoma amounting to some 140,000 per square inch. Herein lies the

Welwitschia (cont.)

clue to its survival, for these stomata absorb the morning fog which comes in from the cold Atlantic almost every morning. The plant is, therefore, like a moss--it is hygroscopic.

The trunk owes its short flattened structure to an early death of the apical bud so that all subsequent growth occurs around the rim of the sunken stem apex. The trunk may be a foot or two high and up to six feet in diameter. It has always been said to have a very long taproot (as long as 30 feet). Studies, however, have shown that it has a relatively shallow fibrous root with many lateral roots just below ground surface; it is doubtful whether the taproot is as deep as ten feet. Young seedlings do have a long unbranched root. After two or three years it is possible to transplant them with care. It is not necessary to cultivate them in long drainpipes. pots 10 -12 inches deep do very well for about 10 years.

Welwitschia is dioecious, meaning that there are separate male and female plants. The female plant will produce a large number of cones (perhaps 100) in a season. The cones are red and about the size of an egg on a long stalk arising from the stem near the leaf bases. The pollen cones produced on the male plants are about $\frac{1}{2}$ the size of the ovulate cones. The cones appear only after a heavy rainstorm or a series of storms spread over 2-3 days. The seeds are quite large and winged and are blown about by the wind. It has been estimated that less than one tenth of one percent of the seeds ever germinate. There is a plant feeding insect, *Probergrothius sexpunctatis* (something like a squash bug) that is almost always found on the female plant. It was thought that this bug was the pollinating agent but that is apparently not the case. The bug is unable to fly, therefore unable to carry pollen from one plant to another. So, like the plant pest it is, it just sucks the sap from the young cones, destroying the embryos. It now appears that the wind is the pollinating agent, inasmuch as it does blow the pollen grains about.

Welwitschia mirabilis may well be the weirdest plant in the world; certainly it is one of the most interesting. It is absolutely forbidden to take *W. mirabilis*, *Pachypodium namaganum*, or diamonds out of South Africa. So if you want them you will have to try seeds. You get the diamond seeds; I'll get the other two and we can trade.

REFERENCES

- Benson, Lyman, 1970, The Status of Welwitschia Mirabilis, C&S Journal (U.S.) Vol XLII, 200.
- Bornman, Chris H. 1978, Welwitschia, C. Struik Publishers, Capetown.
- Bulpin, T.V., 1978, Southern Africa: Land of Beauty and Splendor, The Readers Digest Association South Africa (PTY) Limited, Capetown.
- Glass and Foster, 1976, Cacti and Succulents for the Amateur, Abbey Garden Press, Santa Barbara, California.
- Horwood, Frank, 1974, Succulent Safari to Africa, C&S Journal (U.S.) Vol XLVI, 260.
- Jacobsen, Herman, 1974, Lexicon of Succulent Plants, Blandford Press Ltd, London
- Song, Leo C. Jr., 1980, Gross Morphology of Developing Male and Female Strobili of Welwitschia Mirabilis, C&S Journal (U.S.) Vol LII, 30.

THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY

25, 20, 15, 10, & 5 Years Ago

by Rick Latimer

1961: This last May 6th this Society reached its 25th year. Since there was no society bulletin then, I cannot list the events of August 1961. However, this society did enter an exhibit in the Del Mar Fair that year and won a red ribbon.

1966: The April membership list included such members as Ruth Cuzner, Mr. & Mrs. Greenwood, Helen Hegyi, Nellie & Cathy Kennett, Joan Fleer, C. L. Benbow, Perlso Lewis, Evelyn Chatham, Cleoves Hardin, Mrs. J. Means, Mr. & Mrs. W. Nelson, Mr. & Mrs. W. Scott, Mr. & Mrs. R. Taylor, Mr. & Mrs. Jack Ward, Jim Stalsonburg, "Doc" Vaughan, Frank Mousseau, Maria Reeder, William Waite, Edith Werner, Esther Nesbin, Mildred Gregory and Frank Horwood (then of Leeds, England). The August list included Mr. & Mrs. Caulk, Mr. & Mrs. Foret, Ione Hubner, and G. Stanley of San Francisco.

There was no Espinas y Flores yet but there was Cactus y Suculentas. This bulletin was then one year old. The program listed was Mitchell Beauchamp's Dudleyas. Mitchell Beauchamp had previously exhibited a complete collection of the San Diego County native Dudleyas at the CSSA Show in Arcadia in June. Helen Hegyi had been collecting literature on Aloe vera, which the editor Jack Ward digested into a four page article. Other news included the item that M. C. Richter of Santa Barbara donated his own library to the Desert Botanic Garden in Phoenix (which he had built up over 60 years) plus those of Scott Haselton and the editor of the French periodical Cactus. The President was "Doc" Vaughan, the Vice President was Jack Ward, the Secretary was Ruth Cuzner, the Treasurer was Helen Howe, the Affiliate Secretary was Shirley Ward, the Librarian was Edith Werner, the Social Chairmen were Myrtle Heverlin & Martha Hoffman, and Jim Stalsonburg was in charge of plant sales.

1971: The lead-in article of the August 1971 issue of Espinas y Flores was Helen Witham's "Florida Canyon Botanic Garden" in which she proposed a native plant preserve for that part of Balboa Park. Dr. Philip Corliss wrote about potting mixes for cacti. The succulent-of-the-month was Crassula falcata and was written up by Jim Stalsonburg. The cactus-of-the-month was Ariocarpus fissuratus, but it did not get a write-up. Joyce L. Tate's Cactus Cook Book was recently released and Ruth Nelson's recipe for cactus jelly was reproduced in the article about the new book. An editorial suggested that more work be done on the cactus garden at the San Diego Mission put in by the SDCSS in 1969. In a side bar advice was given on how to root cuttings in water by Mrs. F. B. Hansen of New Zealand (borrowed from the April 1966 New Zealand C. & S. Journal). "The cutting must be well dried -- the cut part suspended just above or barely touching the water. Mrs. F. B. Hansen had luck with Epi's, Cheiridopsis, Rhipsalis, Ceropegias, Euphorbias, and EVEN LITHOPS!". Editor Nibby Klinefelter's "Nib's Notebook" included some of the events run by Scotty at the picnic in July at the Taylor's: "...Donna Buckner displayed real talent for the Upsidedown Cactus Drawing Competition (Lophocereus shottii monstrosus) by winning the contest...Picasso Pat Mooney was 2nd and Billy-the-Kid Bishop came in 3rd...then Scotty had devised another

game by unveiling a cactus, covering it again, and then asking for guesses of the number of areoles (at a nickel a guess - the winner getting the full amount) -- Nellie Kennett's daughter Janet won that with the right number of 217!..." The officers were: Pres. Ione Hubner, 1st VP Walter Scott, 2nd VP Oliver Loyland, Treas. Warren Buckner, Rec. Sec. Harriet Sopp, Corr. Sec. Perlso Lewis. The Board Members were: Education - Floyd Gable, Exhibits - Wilson Wells, Editor - Nibby Klinefelter, Librarian - Ruth Nelson, Hospitality - Julianne Rice, Regalement - Hazel Scott, Historian - Ruth Richardson, Past President - Jim Stalsonburg. Other Chairmen were: Cactivities - Ed Miller, Sand & Soul - Augie Pfeiffer, CSSA Affiliate - Perlso Lewis, SD Bot. Rep. - the Scotts, SD Floral Assn. Rep. - Nibby Klinefelter. The program announced by Walter Scott was entitled "People & Plants" (membership participation).

1976: The program was the Mooney's "Easter Week in Baja". The SDCSS Board discussed what was to be done with the late Dr. Corliss's plants and books. Madelyn Lee wrote about Pachypodiums for the Succulent-of-the-Month and Dr. George E. Radwin's choice for the Cactus-of-the-Month was "Your Favorite Cactus". Anthony D'Attilio's "Flower Study - Echinocereus fasciculatus" had its first reprint (also seen in the June 1986 E y F). Mitchell Beauchamp wrote on the 1973 Endangered Species Act. Some of the perenial comments were: "Unfortunately at the 22 July hearings in El Segundo, CSSA representatives and cactus growers chose to express their concern that curtailed trade in Endangered cacti and succulents would diminish their business...Although the hearing was on the proposed regulations and list, most of the growers attacked the 1973 Act, not a consideration of the hearing. None of the growers or CSSA speakers commented as to whether or not the cacti and succulents listed were actually endangered or not. It is unfortunate that the CSSA has not established a firm policy regarding field collecting, both home and abroad. The days of campers and VW buses loaded to the hilt with booty crossing at San Ysidro, Nogales, or El Paso are numbered..." The officers that year were: Pres. - Martin Mooney, 1st VP - Madelyn Lee, 2nd VP - Reed Pierce, Rec. Sec. - Doris Rake, Treas. - Russel Evans, Corr. Sec. - Jean Merrill, Past Pres. - Loyal Bibbey. The Directors were: Warren Buckner, August Pfeiffer, Mary Birchell, Perlso Lewis, Shirley Berry, Thomas Hamecher. Other committee chairmen were: Librarian - Edith Werner, Editor - August Pfeiffer, Reception - Lucile Beckfield & Edith Billmyer, Regalement - Jean & Leta Hapeman, SD Bot. Rep. - the Anderes, SD Floral Rep. - Verna Pasek.

1981: The program for August this year was given by Dorothy Dunn on the succulents of Baja. No slides were shown, instead she had specimens of representative species right there for all to see. The Annual Show and Plant Sale was August 29 & 30 that year. New members that were listed in the bulletin were Georgia Richmond, Bud Aubuchon, & Gerald Brattmiller. Jim Dice announced that there would be a C & S Symposium in honor of Dr. Lyman Benson, October 24 at Cal State Fullerton. Frank Thrombly wrote the Cactus-of-the-Month which was Austrocephalocereus. Madelyn Lee wrote about Dorstenia and Ficus for the Succulent-of-the-Month article. The officers were: Pres. - Rick Latimer, 1st VP - Frank Thrombly, 2nd VP - John Pasek, Rec. Sec. - Beverly Kirkegaard, Treas. - Joan Johnson, Corr. Sec. - Anna Cornett, Past Pres. - Tom Hamecher. The Directors were: Betty Athy, Shirley Berry, Dr. Monroe, Martin Mooney, Dr. Lee Phelps, Phyllis Flechsig. The Chairmen were: Audit - Jim Berry, Conser-

vation - Dr. Monroe, Bragging Table - Shirley Berry, VIP Table - Sandra Buck, Historian - Rick Latimer, Librarian - Betty Athy, Open House - Martin Mooney, Plant Exchange Table - John Roth, Editor - Rick Latimer, Reception - Rose D'Attilio & Perlso Lewis, Regalement - Nancy Roth, SD Bot. Rep. - Elizabeth Glover, SD Floral Rep. - Verna Pasek, Quail Bot. - Audrey Johnson, Balboa Park Desert Garden - John Pasek.

New Books in the Library

Donated by Paul & Lottie Schraer:

Helmut Bechtel - Cactus Identifier Including Succulents
Anthony Huxley - House Plants Cacti and Succulents
Jack Kramer (and Sunset) - Succulents and Cacti
Edgar and Brian Lamb - Pocket Encyclopedia of Cacti Including Succulents in Color
Sir Oliver Leese - Cacti
Rex E. Mabe - Gardening with Cactus
Rex E. Mabe - Gardening with Succulents
William C. Mulligan - Cacti & Succulents; North, South, Indoors & Out
Rudolf Subik - Decorative Cacti
Frank D. Venning - Cacti

AND

Espinas y Flores (6/72 - 12/85) so we now have our own bulletin bound through 1984 in our library!

MORE NEW BOOKS:

Helia Bravo-Hollis - Las Cactáceas de México

Donated by Beverly Kirkegaard:

Helmut Bechtel - Cactus Identifier Including Succulents
Michael J. Kimberley, ed. - Excelsa #3
Michael J. Kimberley, ed. - Excelsa #10

Donated by Peg Foret:

more volumes of CSSA Journal

REBOUND:

Hans Bornman and David Hardy - Aloes of the South African Veld

---Rick Latimer, Librarian

P. S. Late Additions:

Ed Storms, The New Growing the Mesembs
Arthur C. Gibson & Park S. Nobel, The Cactus Primer

SAN DIEGO CACTUS & SUCCULENT SOCIETY

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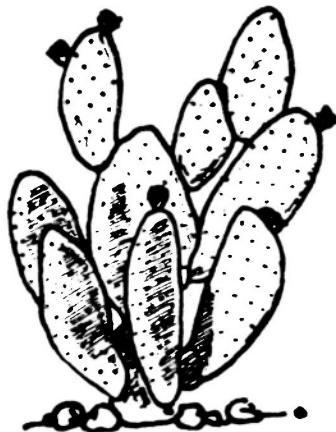
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The San Diego Cactus & Succulent Society is open to all persons interested in growing cacti, other succulents and exotic plants. Meetings are held the second Saturday of each month at 1:30 pm in Room 101, Casa del Prado, Balboa Park. Board of Directors meetings are held after the general meetings. Annual dues are \$8.00 per single member per year, \$2.00 for each additional member of a household within a family. Single copies of Espinas y Flores are 60 cents.

Editor

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