## Espinas y 7 lares

## The Newssetter of the San Diego Cactus \& Succulent Society

Affiliated with the Cactus and Succulent Society of America
Volume 45 Number 1 January 2010


## Program: Buck Hemenway,

"The Richtersveld, Succulent Wonderland"

Mini Talk of the Month: Stan Yalof,
"Calculating Cacti"

Saturday, January 9, 2010
Casa Del Prado, Room 101
Balboa Park

## Annual Winter Show and Sale

February 13, 2010
Newly Enlarged, Judged Show Emphasizing
Novice Competition. Prizes Awarded.
More Vendors Than Ever!
Full Details Within

## PRESIDENT'S MESSAGE



Happy New Year! Last year was a great year for SDCSS and I look forward to 2010 being even better. We have an active supportive board, wonderful volunteers and great members. Anything is possible!

I hope all of you enjoyed the holidays. We had our chaos Christmas Eve at the Miller house, which included really bad karaoke. My newest son-in-law now knows how bad the women in the family sing. We had fun and I enjoyed a quiet day on Christmas working in my yard.

SDCSS had a very nice Holiday Party in December with the help of some very special people. Jean and Bill O'Daniel decorated the tables. Jean, Inacia Matheus, my friend Diana and I met at my house the week before and created the centerpieces. Ruth Hendricks provided a very good dinner and Herb Stern the cork dork was an excellent dispenser of spirits.


A Great Party!
Pam Badger cut up the deserts with style. Laura, Yulia and Katya DeMerritt did a great job passing out tickets at the door.

Lee Badger gathered some interesting auction plants. Western Cactus donated the bare root auction plants and Christmas Cactus' for the tables. Pam Badger, Mary and Ed DeLollis did a great job on the auction. Rudy Lime's plant was selected from the Gift Exchange and he was first to choose from the gift exchange plants. Sharon Wirth matted the bookplates for our Silent Auction.


Herb Stern

Tom and Lee did a great job providing Gift Plants for the party. Pam Badger did a great job of running the drawing. Even though we came
up short due to my not notifying a vendor, the plants were selected with care and joy. Those that have red tickets left, please bring them to the January meeting. We will do the drawing at the beginning of the break.

Treasurer Ken Blackford spent most the party working and I truly appreciate his efforts. Be sure to thank him for the great job he does.

Our Volunteer of the Year is Michelle Heckathorn who received a certificate and $\$ 25$ in plant bucks. Michelle works the plant exchange table at our regular meetings, runs a cash register at our sales, has given Plant of the Month talks on Haworthia and Sansevieria and takes great pictures of the plants we show. She is a true asset to the organization.

We had our special drawing for Volunteers. The winners were Joe Kraatz, Chris Worton and Steve Harris. It was agreed by the members present that we should do it again next year.

Lots of people helped with clean up since that was how the centerpieces were taken home. Thanks to all of you for your support.


Chris and Michelle


We have lots of exciting things coming our way in 2010. Our January meeting will start us out looking for lots of volunteers for the February Show and Sale. We have more vendors than will fit inside room 101 so we will be setting up part of the sales area in the patio outside the room. We will need extra security and support for this area. If you have a 10 x 20 canopy or a pop up we can borrow for the event please let Tom DeMerritt know.

The Bus Trip to the Huntington still has some room. See the announcement in last month's EyF for complete details. Please contact me if you are interested in going.

I look forward to seeing you at the meeting.

## Chris Miller

27 December 2009

## PROGRAM

## "The Richtersveld, Succulent Wonderland" Buck Hemenway

Experience those unbelievable plants that only grow in one of the driest places on earth. Five days of intense exploration of that magical place.

Buck and Yvonne Hemenway are deeply involved in the succulent world. He is President of the San Gabriel Valley C\&SS and


Buck and Yvonne she publishes the newsletter. He is on the Board of Directors of Gates C\&SS and CSSA among other green related organizations. They own the Prickly Palace which is a wholesale grower of Cactus and Succulents. Look them up at www.pricklypalace.com


Tromotriche pedunculata ssp. longipes, by BH


Aloe gariepensis, by BH


Dawn on the Orange River by BH, edited

## MINI TALK OF THE MONTH "Calculating Cacti"

## Stan Yalof

## Athens, 523 BC

Posters were splashed in the agora proclaiming "Come one, come all, Pythagoras had solved the riddle of the 'Golden Rectangle' using insights from musical scales."

The sculptor Borgronius shook his head, skeptical that such an aesthetic decision could be expressed as a formula. It had long been an intuitive tenet that a work of art, building or sculpture was particularly pleasant and aesthetically golden if the width to height was 5 to 3, a ratio of about 1.67 to 1 (More accurately $1.618:: 1$ ). "Hmm, I wonder if there is some logic that this Mathematikoi has discovered?"

Pythagoras was hoisted to the stadia. "Is there a mathematical basis for the beauty of the golden rectangle? We can find our answer perhaps in a musical string. Orpheus, may I borrow your lyre?"

Handing it over, "Treat it with care, its bindings are fresh."
"Let us call a total string length $X(X=A C)$. If you were to halve the length of the lyre string by pressing on its center, the sound would double, climbing an octave. This is a ratio of the whole to a half, or 2 to 1 ." The crowd hummed in agreement.

Continuing, "Now here is an oddity. If it were pressed in such a way along the total length $X$ at $B$, with a length $A B$ which we shall arbitrarily value as $1(A B=1)$, then the lesser length $B C$ equals $X-1$.
 greater part 1 to the lesser part ( $X-1$ ). Set them equal: $X / 1=1 /(X-1)$. Factoring we get $X^{2}-X=1$. What number do you lads think will satisfy that equation, Hmm?"

Orpheus cried out, "The Golden Ratio, 1.618!"
Borgronius was amazed, struck by his awakening vision of nature as a mathematician. A murmur of agreement swept through the crowd.

Orpheus posed a question. "I must go down to Hades to rescue Eurydice. I plan to strum some hot licks on my lyre to charm the underworld management."
"But By Zeus, Orpheus, this has never succeeded in the past."
"But maybe if I pluck at the Golden Ratio ...?"
The crowd carried Orpheus on their shoulders to the sulphurous opening to the underworld and cheered him as he entered, strumming only liquidly beautiful golden chords. They never expected to see him again.

Later, Pythagoras greeted Orpheus as he was about to emerge (alas, without Eurydice) when poof, they found themselves transported through time to San Diego. It was a great culture shock: noisy metal monsters encapsulating people, foreign dress without a decent toga ... They sought calm and refuge from the surrounding oddities and entered a stationery store. Suddenly, speechlessly, delightedly, Pythagoras pointed to a shelf, to a familiar object. "Look, look Orpheus." It was a package of cards, $5 \times 3$ cards, whose ratio is $5 / 3=1.67$, the Golden Ratio!

## $12^{\text {th }}$ Century AD, Pisa, Italy

Italian mathematician Fibonacci (Fee bo knat chee) introduced Arabic numbers, the arithmetic of position, and modern accounting. As a recreation, he calculated how many generations and offspring would be produced starting with a single pair. From the $1^{\text {st }}$ parents, a second pair was birthed which in a generation could breed. The number of breeding pairs per generation were $1,1,2,3,5,8,13$, etc. Note that each number in this series is the sum of the preceding two. And the ratio of a number and its preceding number approaches 1.618 , the golden ratio (There is an angle associated with this ratio, the Golden Angle, $\Phi$, which equals137.5 Degrees ${ }^{1}$. On a clock face, this would be equivalent to 22.9 minutes ${ }^{2}$.

## Plants and the Golden Ratio, Escondido 2011

The rain was very welcome. The large palm outside my window showed clockwise (CW) and counter-clockwise (CCW) leaf patterns, standing out with their wetness. You can easily see similar patterns on pineapples, sunflowers, honeycombs, and many cacti as illustrated in the following picture. For plants, this pattern is initiated in the generative tip at the growth center. For cacti, this tip (the apical meristem) continues to grow centrally upward or outward. Every $\Phi$ angle the tip buds off a side bud. The next side bud will be $2 \Phi$, and a bit higher than $1 \Phi$. As the plant grows and swells, the older buds move outward. This develops the phyllotactic pattern on the plant body.

Mammillaria and Opuntia have helicoidal patterns with $\Phi=137.5$ deg. A Mammillaria seedling will split off a bud every 137.5 degrees or 22.9 minutes. Thus, there will be buds at $0,22.9,45.8,67.7$, etc. minutes. Notice that there are less than 3 buds per circumference. Note
also that as we clock second times around past zero the buds are displaced 7.7 minutes. Each time around there is an additional 7.7 minutes displacement.


The line through these displacements is the beginning of a pattern.
These Mammillaria buds are our future areoles. But there are only 3 baby areoles per circumference at the tip and many more at the belly. How does this increase work? Like this. The band of the top areoles sinks into the spaces of the lower band which shoves below until we have a filled band. This band will nest with the underlying band, displaced by 7.7 minutes. Tracing along the various 7.7 minute displaced areoles gives the helicoidal pattern, an artifact of the action of $\Phi$ at the growing tip. It is also the closest and most efficient packing of areoles.

Ribbed barrel and columnar cacti are 0.5 to 1.0 degree ( 0.08 to 0.167 min ) larger. Over and under these limits, the pattern disappears ${ }^{3}$. The number of ribs tends toward Fibonacci numbers or very near them. For example, in Ferocactus latispinus 49\% had 13 ribs, 42.2\% had 8 ribs, and $6.8 \%$ had 5 ribs.

The symmetry of $\Phi$ applies to trees, flowers, snails, and the work of many artists

1) The golden angle is obtained with the relationship $1 /(1.618+1)=360$ deg. $/$ $\Phi$, where $\Phi=137.5$
2) $(137.5 / 360) \times 60$ minutes $=22.9$ minutes
3) "Functional Morphology and Evolution of Stem Succulence in Cacti", A.

Altesor \& E. Ezcurra, Journal of Arid Environments 53 (2003), pp. 557-567

## WINTER SHOW SCHEDULE, AWARDS, AND RULES

SCHEDULE FOR SATURDAY FEBRUARY 13, 2010
8:00am to 10:00am Set up, BRING IN YOUR PLANTS!
9:00am to 10:00am Sales open to members only
10:00am
10:00am to 11:00am Judging (show area closed to all except the judges) Show Opens
Show and Sales Close
10:00am
11:00am

## AWARDS

NOVICE (an exhibitor who has won 10 or fewer blue ribbons in a recognized show) Best Cactus $\quad 25$ PB's (Plant Bucks redeemable at SDCSS sales tables)
Best Succulent

## Best Winter Grower 25 PB's

ADVANCED (an exhibitor who has won more than 10 blue ribbons in a recognized show)
Best Cactus 25 PB's
Best Succulent
BEST OF SHOW (Novice or Advanced) 50 PB's
First, Second, and Third Place Ribbons will be awarded in all categories for both Novice
and Advanced entrants.

## RULES

1) Participants must be members of the SDCSS.
2) Entries must be in the possession of exhibitors for at least six months. Plants must be clean, (no weeds or debris), healthy (no insects, disease or pesticide odor) and dry. Plant labels should be removed or hidden. Exhibitors are responsible for placing entry cards with plants prior to judging. The show committee may remove any entry that distracts from or
jeopardizes the health of other entries.
3) Plants must be individually potted specimens except category \#63, Dish Gardens.
4) Depending on number of entries, prior to judging, the show committee may combine or divide categories and rearrange entries. The show area will be closed during judging. Plants must remain until end of show.
5) Entries are judged on:
a) Condition, size, maturity and difficulty of culture: 70\%
b) Staging - pot, top dressing, arrangement, cleanliness: $25 \% \mathrm{~s}$
c) Nomenclature: $5 \%$
c) Nomenclature: 5\%
Awards are given only if the ju
Awards are given only if the judges believe they are merited, and all decisions are final.
6) The SDCSS and show committee will take due care to safeguard entries but cannot be held responsible for damage to, or loss of, plants and property.
7) Fockea, Petopentia, Raphionacme
8) Caralluma, Hoodia, Huernia, Stapelia
Geraniaceae
9) Pelargonium
10) Sarcocaulon
Apocynaceae
11) Adenium
12) Pachypodium
Asclepiadaceae
13) Fockea, Petopentia, Raphionacme Euphorbiaceae
14) Leaves, no spines: decaryi,
capsaintemariensis, bupleurifolia
15) Leaves and spines: milii, gottlebei,
viguieri, unispina
16) No leaves or spines: caput-medusa,
inermis, esculenta, obesa
17) Spines, no leaves: stellispina,
horrida, ferox, stellata, clavigera
18) Monadenium, Jatropha, Pedilanthus Crassulaceae
19) Cotyledon, Tylecodon
20) Crassula, Kalanchoe
21) Dudleya
22) Echeveria
23) Pachyphytum, Graptope
24) Aeonium, Sedum
25) Gasteria Asphodelaceae
26) Aloe 26) Mestoklema, Aloinopsis, Aizoaceae
27) Lithops, Conophytum
28) Pleiospilos, Titanopsis,
Dinteranthus, Faucaria
29) Mestoklema, Aloinopsis,

## DIVISION 2: NON-CACTUS SUCCULENTS

10) Blossfeldia, Frailea, Uebelmannia 9) Thelocactus, Sclerocactus, Pediocactus 7) Mammillaria; hooked spines
11) Mammillaria; straight spines
12) Thelocactus, Sclerocactus, 6) Echinocactus, Ferocactus, Hamatocactus
13) Mammillaria; hooked spines 4) Gymnocactus, Turbinocarpus, Stenocactus 3) Coryphantha, Escobaria, Neobesseya
Neolloydia, Luechtenbergia
14) Gymnocactus, Turbinocarpus, Stenocact 3) Encephalocarpus, Ortegocactus Aztekium, Pelecyphora, Ep
Strombocactus, Obregonia
Encephalocarpus, Ortegoc North American Cacti
15) Ariocarpus, Astrophytum
16) Seed grown by exhibitor 22) Variegates, crests and monstrose 19) Ceroids, columnar types
17) Opuntioides Other cacti
18) Ceroids
19) Matucana, Submatucana, Oroya, Borzicactus 16) Notocactus, Parodia, Acanthocalycium Pyrrhocactus, Horridocactus
20) Gymnocalycium 14) Eriosyce, Neochilenia, Neoporteria, 11) Buiningia, Discocactus, Melocactus
21) Copiapoa
22) Dish Gardens 62) Seed grown by exhibitor 59) Bulbs
23) Variegates, crests and monstrose
24) Succulent bonsai Other
25) Bulbs 58) Bombax, Cucurbits, Fouquieria,
Dioscorea, Pachycormus Caudiciforms, Pachycauls, Geophytes 57) Avonia, Anacampseros, Ceraria Passifloraceae
26) Adenia

55) Ficus, Dorstenia 54) Sansevieria әеәэеиәеэела Didiereaceae

53) Alluaudia, Didierea Burseraceae
54) Bursera, Commiphora

Bromeliaceae
51) Abromeitiella, Dyckia
49) Senecio
50) Othonna Asteraceae
49) Senecio


## WINTER SALES HELPERS <br> TRAINING - REQUIRED!

We will hold training for cashiers, scanners and boxers at the January meeting. If you are interested in volunteering for these jobs at the Winter Sale please be at the meeting by 12 so you can attend the training. Jim DeForest and Cathy Clark have written a new procedure that will help standardize the process and make training easier. Training will begin at 12 sharp so please adjust for parking so you get there on timel. If you have any questions call Chris Miller .

## ESPINAS Y FLORES GOING ELECTRONIC:

The newsletter is available for viewing and downloading at the Club website, www.sdcss.net. Take a look! As a cost-savings measure, all members are being urged to accept an e-mailed version of the newsletter - the cost of color printing and mailing far outweigh the annual membership fee. To cancel your hard copy of the EyF, contact the membership chairperson or the newsletter editor. You will be notified by email of the availability of your next electronic issue, the speakers at the next meeting, and other significant announcements. The electronic version will often contain additional color images, but its length will be kept below about 1.5 MB . It's probably too long for convenient downloading via dial-up internet connections but OK for cable or DSL connections.

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## SDCSS HELP WANTED ADS

If you are looking for a way to help here are some ideas:

| Winter Show: <br> Need volunteers for <br> security, meals, <br> greeting, set up and <br> clean up. | Cashiers, Scan- <br> ners and Boxers: <br> For Winter show. <br> Sign up this month. <br> We will train at the <br> January meeting. | Trophy Sponsor- <br> ship: We are in <br> the process of up- <br> dating trophies <br> and are looking for <br> donations to sup- <br> port the process. |
| :--- | :--- | :--- |
| Education Chair: <br> For Summer Show: <br> Put together a pro- <br> gram for education <br> during the summer <br> show | Membership Com- <br> mittee Members: <br> To support the <br> membership chair <br> in providing mem- <br> bership services. | Ride Coordinator: <br> Point of contact for <br> those members who <br> need a ride to meet- <br> ings and those willing <br> to give rides. |
| Volunteers for WAP <br> Gardens: For gar- <br> den maintenance, <br> new area develop- <br> ment, plant identifi- <br> cation and to work in <br> the greenhouse | Trip Coordinator <br> to coordinate trips, <br> arrange bus con- <br> tracts, destination <br> requirements, etc. | Audio Visual Person <br> Duties to include or- <br> ganizing existing <br> equipment, setting up <br> at meetings and ad- <br> vising on require- <br> ments. |

Ride Needed! Lyn Olsson needs a ride to the next meeting! She lives in North Park, east of Balboa Park, on Gregory Street close to McKinley Elementary and St. Augustine High School. Somebody! Please call her at (619) 281-1628 or e-mail her at lolsson@mail.sdsu.edu

Contact Chris Miller if you would like to volunteer

The due date for submission of all material to be published in EyF will be the second-to-last Saturday of the month preceding the next monthly meeting. All submissions are to be made to the Editors. Please e-mail your articles to Paul \& Carol Maker at pdmaker@roadrunner.com.

## UPCOMING EVENTS

## Jan 9: SDCSS Monthly Meeting

Feb 13: SDCSS Winter Show and Sale
Mar 20: "The Incredible Staging Workshop, Plant and Potters Sale" featuring staging exhibitions by Larry Grammer and John Luhnow. The Caro Desert Nursery, 9607 East Avenue S12, Littlerock, Ca 93543. 661-456-0787. Visit www.CaroDesert.com.

Apr 10\&11: South Coast Cactus and Succulent Society Show and Sale at the South Coast Botanical Gardens, 26300 Crenshaw Blvd., Palos Verdes, CA. For info. call 310-832-2262

Apr 17\&18: Green Scene Plant Sale at the Fullerton Arboretum, 1900 Associated Road, Fullerton, CA 92831
May 1\&2: Sunset Cactus and Succulent Society Show and Sale at Veterans Memorial Center, Garden Room, 4117 Overland Ave., Culver City, CA. For info. call 310-822-1783
May 2: South Bay Epiphyllum Society Show and Sale, 9am to 4pm, at South Coast Botanical Gardens. For info. call 310-833-6823
May 15: Gates Cactus and Succulent Society $30^{\text {th }}$ Show and Sale, 9 to 4, Jurupa Mountains Cultural Center, 7621 Granite Hill Drive, Glen Avon, CA. For info. call 909-360-8802
May 16: Huntington Plant Sale, 10 to 5, Huntington Botanical Gardens, 1151 Oxford Road, San Marino, CA. For info. call 626-4052160
May 16: Epiphyllum Society Show and Sale, Los Angeles County Arboretum, Arcadia, CA. For info. call 310-670-8148

May 22\&23: Central Coast Cactus \& Succulent Society Annual Show and Sale, 10-4, Ludwick Center, 864 Santa Rosa, San Luis Obispo, CA. For info. call 805-237-2054
www.centralcoastcactus.org
June 5\&6: SDCSS Summer Show and Sale
June 12\&13: Los Angeles Cactus and Succulent Society Show and Sale, Sepulveda Garden Center, 16633 Magnolia Blvd., Encino, CA. For info. call 818-363-3432

June 25-27: CSSA Annual Show and Sale, Huntington Botanical Gardens, 1151 Oxford Road, San Marino, CA. For info call 626-4052160 or 2277. Plants sales June 25-27, show is 26-27. Free to the public.

## SAN DIEGO CACTUS \& SUCCULENT SOCIETY

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Secretary: Candy Garner
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## STANDING COMMITTEES \& SUB COMMITTEES

Education, Conservation \& Exhibits
Conservation: Joe Kraatz \& Herb Stern
Brag Table: Candy Garner
Plants of the Month: Don Hunt
Summer Show: Peter Walkowiak
Winter Show: Peter Walkowiak
Historian: Terry Parr
Library: Don Hunt, Chris Miller, Jeanette Dutton, Steve \& Kathy Harris Exchange Plants \& Seeds: Michelle Heckathorn \& Sara Schell
Sales, Meetings, Plant Sales \& Supplies
Membership: Collette Parr
Mailing: Jean \& Bill O'Daniel
Annual Sales: Chris Miller \& Joe Kraatz
Auction \& Holiday Plants: Lee Badger \& Tom DeMerritt
Monthly Plant Sales: Joe Kraatz \& Lynn Elliott
Monthly Supply Sales: George \& Jerry Plaisted
Benefit Drawing Table: Collette \& Terry Parr
Publicity: Tom DeMerritt \& Joe Kraatz
Programs: Kelly Griffin
Reception: Susan Hopkins \& Judy Walkowiak
Monthly Regalement: Rudy Lime \& Susie White
Picnic Regalement: Laura \& Tom DeMerritt
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