

PROGRAM FOR JANUARY

PAGE 2

B. Juan Chahinian, explorer, editor of "The Sansevieria Journal", structural engineer, and plantsman, will give a slide show lecture on collecting *Sansevierias* and other rare succulents in Kenya. To order The Sansevieria Journal, send check for \$10.50 (add \$.87 tax in CA) to: TRANS TERRA, 18618 Erwin Street, Reseda, CA 91335; phone: (818) 344-4096. See you all there and bring a friend.

PLEASE RENEW YOUR MEMBERSHIP EARLY!

AND PLEASE FILL OUT THE NEW 1994 MEMBERSHIP FORM. WE ARE IN THE PROCESS OF CREATING A NEW MEMBERSHIP /MAILING LIST; PLEASE HELP US BY UPDATING ANY MEMBERSHIP INFORMATION.

- ★ ARE WE SPELLING YOUR NAME CORRECTLY???
- ★ DO WE HAVE THE CORRECT ZIP CODE ON YOUR MAILING LABEL???
- ★ DO WE HAVE YOUR CURRENT PHONE NUMBER????

\$\$\$ PLEASE BE AWARE \$\$\$

IT COULD COST YOU BIG BUCKS IF YOU DON'T READ THIS NOTICE!!!

The street just East of our meeting place has recently been painted with new curb colors:

Green - This space is 42 feet long & stenciled "Parking 12 Minutes Max".
Blue - This space is 27 feet long with sign post with indicates "Special Placard or License Plate required"; this space for disabled /handicapped parking only.

Yellow - A 73 foot long space stenciled "Commercial Loading 20 Minute Max"; however, CA Driver handbook notes that if the driver remains with the vehicle, loading or unloading is Okay.

THESE ARE 24 HOUR SPACES, THEY DO NOT EXPIRE @ 6:00 PM OR ON SUNDAYS. DO NOT EXPECT NOT TO BE NOTICED. FINES FOR THESE VIOLATIONS START AT \$110.00 - PLEASE DON'T GET CAUGHT!!!



NEW MEMBERS! WELCOME!

- KITTY SABO** - Kitty is a longtime friend from up north of Mammillaria saboae fame, welcome back!!
- BILL FELDMAN PHD** of Boyce Thompson Southwestern Arboretum
- PAMELA PEAK**
- TROY TAYLOR** of Taylormade Cactus
- GERALD RUDY**
- REGINA BERNES**
- ALAN NIKODYM**
- PAUL & LOTTIE SCHRAER**
- CYNTHIA CARLSON**
- BETTY HUNTER** of Hunter's Nursery in Spring Valley
- BRENT McCOWEN**
- STEVEN BECUTTI**
- MIKE & STUART PARVIN**
- STEVEN HAMMER**, alias Dear Mabel & conohead author of The Genus Conophytum.

WELCOME SDC&SS BOARD OF DIRECTORS FOR 1994-1995: SHIRLEY BERRY, DYLAN HANNON, RICK LATIMER, ED NOLAN, KAY QUIJADA, & MILLE WILLIAMS. THANK YOU TOM DeMERRITT & HELEN BARKDOLL FOR YOUR ENERGY AND COMMITMENT. WE ARE ALL PLEASED TO HEAR THAT TOM WILL STILL BE HEADING UP THE JULY PICNIC THIS YEAR - THANKS TOM, IT WAS THE BEST PICNIC EVER LAST YEAR!!! NOW, ON TO ANOTHER GREAT YEAR



LAURA DeMERRITT HAD SURGERY ON HER KNEE THIS WEEK; HOPE EVERYTHING GETS PUT BACK EVEN BETTER THAN IT WAS LAURA, AND WE HOPE YOU'RE FEELING NO PAIN!!!!



DEADLINE FOR FEBRUARY ISSUE OF ESPINAS y FLORES IS JANUARY 25th. THANK YOU!!!!



WE NEGLECTED TO OBTAIN A REFRESHMENT VOLUNTEER LIST FOR JANUARY!!!! PLEASE BRING IN SOME GOODIES IF YOU CAN, AND/OR BE PREPARED TO SIGN UP FOR NEXT MONTH!!!

The Wild Animal Park needs help moving plants to the new Aloe garden, please call Joey at 239-0804 for details. Also, our annual Baja garden care program will start in February.

Thanks for your participation.

See the latest issue of **Zoonews** for an acknowledgement of our Society and read about the Baja Garden.

THANK YOU JIM & MILLE WILLIAMS for including the SDC&SS in their Last Will & Testament. FYI the "legal wording" goes like this: "Upon my death I give, devise and bequeath all my cactus and succulent books and plants to the San Diego Cactus & Succulent Society, Inc., P.O.Box 33181, San Diego, California 92163." Our children, grandchildren and future cactophiles thank you!!!

We are honored and pleased to have Frank & Marianne Thrombley as new SDC&SS Life Members. Frank was president in 1983-84, and both have been actively involved with the hobby and this society. In the past few years they have made many special contributions both in plants and man-hours to the S.D.Wild Animal Park and Baja Hill. Frank has put together many memorable educational displays for our June Show and we hope he does one this year! We all look forward to Frank's creative writings in *Espinas y Flores*. **THANK YOU FRANK AND MARIANNE!!!**

A special thanks to Harold & Mildred Richter who supplied the Holiday Party with treats of Jasper, Agate, Geodes, Fossilized Coral, Chalcedony, and many assorted "Good Plant Staging Rocks". (ed.note - *My father, a miner, called these kinda rocks "Leverite" - Leave 'er right there, it ain't worth a damn.* He always thought I was crazy collecting rocks everywhere we went!) Everyone lucky enough to have an odd ticket was seen carrying one of these beauties home alone with their gifts plants. Thank you!!

In January we will have a 20% off sale on all of our ceramics which are presently bursting our lockers. Now is the time to get those very special plants you plan to show established in a suitable pot. The June show is just around the corner - as physics has changed and time goes faster now

A reminder now that the temperature has dropped at night - the overwintering non-migrating Hummingbirds are dependent on us who have kept our syrup feeders full during the rest of the year. Keep them healthy, use only Sugar in your mixture, and give those delightful little zoomers a break during inclement weather.

Thanks to Barry Armstrong of Tucson, AZ for providing the specimen *Mammillaria tayloriorum* for Bob Taylor - a special Christmas present to a very special cactologist & Life Member. Bob, we love you!

Also it was terrific seeing Teresita Lime at the Holiday party - Teresita you are looking terrific, talking, smiling & happy to be with us. We are very happy to have you back!!! We hope that we will be seeing Rose D'Attilio back on her feet real soon too - we miss you Rose, get well soon.

Accolades & applause to TOP HAT CATERERS of Lemon Grove. The turkey was superb, the ambrosia heavenly, and the service excellent. We highly recommend them for any function: Call Nicholas @ 469-8889.

QUAIL BOTANICAL GARDENS DESERT GARDENS WALK

Larry Beezley, Curator of the Desert Garden, will be giving a special tour of both the New World and Old World Desert Gardens on Saturday, January 29th @ 10:00 am. Meet at the Visitor's Center. Larry will be discussing desert plant adaptations for survival, convergent evolution (plants that look the same but are unrelated) and the endemism of the Baja flora.

SDC&SS Life Member Phyllis Flechsig was honored as Quail Botanical Gardens Docent of the Month. She has volunteered her time & expertise to Quail Botanical Gardens for many years, and has written articles for *Quail Tracks* and *Quail Call*. Congratulations, Phyllis!

BOTANICAL DRAWING WORKSHOP: On Saturday & Sunday, February 19-20th, there will be a workshop @ Quail Botanical Gardens to learn to draw from specimen plants in the Gardens' collections. The workshop will be taught by artist and SDC&SS member, Irina Gronborg, nationally known for her color pencil botanical drawings. Registration fee is \$75 for Quail members & \$90 for non-members. Fees include buffet luncheon on Saturday and buffet brunch on Sunday. For reservations: (619) 436-3036.



Dr. Ruben V. "Doc" Vaughan, 1886- 1982 was a SDC&SS Life Member and President of our society (1966 -1968). He wrote many articles for *Espinas y Flores* and we hope to reprint a few in the future as they have a special historic and entertaining quality. His autobiography "The Print of my Remembrance" is a tale of living Americana and is in our library, upon special checkout. Fascinating reading about Ol' Doc Vaughan of Avalon, the famous fisherman, Narcotics Officer, Pharmacist, Naturalist, Philanthropist, Radio Personality (Ben Hunter's Nite Owls), and Cactus & Succulent enthusiast. He was the main energy in building the lovely Wrigley Botanical Garden on Catalina Island.

AS I SEE IT - DOC'S CATALINA DIARY - Thirty-sixth Entry

by Doc Vaughn

PAGE 6

When Wrigley acquired title to this fabulous bit of land floating in a turquoise sea just off the coast of California, he also became possessor of a team of mighty big and very ancient mules.

Now no man knows whether a mule is a he, she or it as they are hybrids and seldom given to love making. It has always seemed to me that every mule is sullen, phlegmatic, taciturn, stubborn and just ornery at times. Yet behind this facade of deadpan expression and behavior there lurks a great intellect. The wisdom of the ages is locked within that thick skull.

When a mule is lathered hot and taken to water it will not drink; neither will it eat poisonous weeds nor freshly-cut green alfalfa after a long diet of dry hay. A mule seems to sense that a change of diet would be dangerous and painful.

On the other hand, a horse that is red hot after a long hard ride will drink deeply of ice cold water, then founder and many times die. A horse will nibble at snow along the roadside and get colicky, but not so a mule. A horse expresses love and devotion and, like a dog, becomes part and parcel of the man who tends him.

Not so with a mule, who is business and business only. I remember the mules they took down into the mines in Butte, Montana to haul the ore cars. A mule knew after a day of toil that just so many trips were his assigned lot and no more could be gotten out of him. I heard the miners tell that if an extra pound was added to the train, the mule would balk and that was that--- off came the extra load.

These mules in the mines were sold by my maternal grandfather who was the U.S. Army Remount Colonel for Fort Assinaboine -- now called Havre, Montana. As a boy I watched the mules being thrown, tied and put into the hoist-buckets, then dropped slowly down to certain mine levels where they remained for the rest of their lives or until an explosion killed some of them off. If the mine closed down, as they sometimes did during strikes or depressions, then the owners would have the mules killed and left below. Such practices were cheaper than bringing them up to the surface.

But I have digressed quite a bit from our Maud of Eagle Nest --a mule of particular interest to one exploring Catalina. She worked pulling the sulky cultivator along the rows of garden produce. At other times she was teamed with Ynez for hauling the hay wagon. Days passed, then years, and the ages of these two mules was much debated and argued. Like Ol' Doc Vaughn of Avalon, they seemed to be ageless and tireless.

Like all things mortal, there comes a day when we find that there is no antidote against the opiate of time. So it was one night when Old Maud laid down.

They tell me when a mule lies, it is all over but the burial. In this, mules also differ from horses as a sick horse many time gets cured of his illness or ailment. But a mule never lies down until it is dying.

I am a tender-hearted old man, which explains why I am a poor man today; just never could say no. I tell you in all frankness I cried, there in that dusty, smelly barn that night, as I watched old Maud's eyes search my face for some kindly act to help assuage her pain. I poured cold water on her head then gave her some paregoric water as a drench. Before dawn she passed on to a better life and I went home in deep sorrow and meditation.

Came the dawn (as the movies used to state in their titles before talkies came to our land) . . . with the dawn, I had a coruscating idea. I would skin the mule, for she had a metallic hide of real beauty. So I called the famous Cantwell, our taxidermist and the vaqueros and we sallied forth to do the job.

Well, I did not know that a mule could weigh so much. This one in stark death weighed about twelve hundred pounds. It was a long and tedious chore we tackled, for rigor mortis had set in, which was not a good turn of events for us. But when we got her skinned it filled a fifty-gallon oil drum. The hide weighed nearly three hundred pounds and was almost an inch thick.

Then the disposal of the carcass posed a problem, but I, in my usual manner, had a brilliant idea. We hooked a chain to the end of our truck and away we went down the canyon by Eagle Nest leaving bits of meat along the road. A chunk here, a bit more there, until we reached a deep part of the canyon where we all gave the big heave-ho and away went Maud---but not as far as we had hoped. She lodged in a tree about fifty feet down the slope. There she stayed in all her mulish obstinacy in spite of all our grunting and heaving.

There was nothing to do but go home. We forgot the incident until the next day the bus went bouncing down the canyon. Folks saw great clouds of crows and eagles arise from the carcass as well as many red foxes go slinking away. That was most interesting, but the smell was not Chanel No.5 nor anywhere reminiscent of it.

Renton phoned to me to do something! And now! So as usual, I went to my friend Hugh Smith, the road builder, as usual he solved my problem. His solution lay in six sticks of number forty Hercules dynamite which we placed under Old Maud. Then we lit the fuse and scrambled out of there in a hurry. Old Maud went sailing towards heaven. They tell me rocks rained along the road the next few days . . .

Those were the "Good old days."

CACTUS OF THE MONTH: TWO TUBER FORMING CACTI *PENIOCEREUS* AND *PTEROCACTUS* by J. A. Betzler

The *Peniocereus* (*Pe.*) are a genus of tuber forming cacti native to the southwestern United States, Mexico, and Central America. The generic name was coined by Britton & Rose in 1900 and refers to the thin pencil-like stems. There are about 20 species which are to the right. This genus has been lumped at one time or another into *Cereus* by various authors and has also been known as: *Nyctocereus* (Berger) Britton & Rose 1909, *Neoevansia* Marshall 1941 and *Cullmannia* Distefano 1956. These have all been lumped into *Peniocereus* (Hunt 1992). The tubers may resemble spindle shaped yam-like tubers, as in *Pe. striatus*, or the turnip like organs of *Pe. greggii*. These preceding species may produce 'turnips' that can weigh up to 43 pounds! Typically the above ground stems of this cactus are slender (approximately ¼ inches) and relatively inconspicuous. The stems are 4 to 6 ribbed, cane-like with abundant spines, though these are small. They are difficult to find because they usually grow up through the canopy of other plants. When flowering occurs, the presence of these plants becomes apparent. The flowers are nocturnal two to three inches in diameter and four to six inches long, quite a contrast to the slender stems. Though most often the flowers are closed during the day the large closed buds make the flowering stems contrast sharply with their supporting host. Careful observers may also notice the red fruit produced after flowering, as well.

These plants are not very common in cultivation, though *Pe. castellae*, *greggii* and *johnstonii* are occasionally available.

Fifteen species and five provisionally accepted (italics and bold type respectively) with synonymy in regular type

Peniocereus :

<i>castellae</i>		Mexico
cuixmalensis		Mexico
<i>diguettii</i> = <i>Pe. striatus</i>		
<i>fosterianus</i>		Mexico
<i>greggii</i>	—	U.S.A., Mexico
haackeanus		from cultivation
<i>hirschtianus</i>		Guatemala, Nicaragua, El Salvador, Costa Rica
<i>johnstonii</i>		Mexico
lazaro-cardenasii		Mexico
<i>macdougallii</i>		Mexico
<i>maculatus</i>		Mexico
<i>marianus</i>		Mexico
marnierianus		from cultivation
<i>oaxacensis</i>		Mexico
occidentalis		Mexico
<i>papillosus</i> = <i>Pe. sp.</i>		
<i>rosei</i>		Mexico
<i>serpentinus</i>		Mexico
<i>striatus</i>		U.S.A., Mexico
<i>tepalcatepecanus</i>		Mexico
<i>viperinus</i>		Mexico
<i>zopilotesensis</i>		Mexico

Though *Pterocactus* (*Pt.*) has an underground storage organ as in *Peniocereus*, this is the only resemblance. *Pterocactus* was named by Schumann in 1897 and has stood untouched all these years! The winged seed (Latin for wing = ptero) of the genus is unique and hence its name. These strictly Argentinian plants are closely related to the *Opuntias*. The slender stems are deciduous and are shed once a year. Like other *Opuntias* the spines are made up of glochids, those bothersome loose spines that attach to anyone brushing up against these plants. The flowers are typical *Opuntia* type except they are sessile (without a flower stem) and the fruit is embedded in the stem.

CACTUS OF THE MONTH: *Peniocereus*
& *Pterocactus* by J.Betzler continued...

The only species, out of ten, that is commonly offered is *Pt. kuntzii* (formally *tuberosus*). Both genera are usually grown as caudiciforms and the fantastic tubers are exposed. The soil conditions must provide excellent drainage, but the tubers must be protected from the blazing sun. Propagation from cuttings will produce very nice tubers. If a seed source is available try your hand with seedlings.

Nine species and one provisionally accepted, coded as above

Pterocactus :

araucanus all are from Argentina
australis
decipiens = *Pt. kuntzii*
fischeri
gonjianii
hickenii
kuntzei
megliolii
pumilus = *Pt. valentini*
reticulatus
skottsbergii
tuberosus = *Pt. kuntzii*
valentini

Bibliography

Benson, L. 1981. The Cacti of Arizona, 3rd edition, University of Arizona Press.

Hunt, D. 1992. CITES Cactaceae Checklist Whitstable Litho Ltd.

Flehsig, P., 1989, Cactus of the Month: *Peniocereus* and *Pterocactus* *Espinas y Flores* 24: (2) center section (much information is compiled here)



PAGE 8



PLEASE BRING IN YOUR PLANTS OF THESE GENERA - THE AUTHOR DOES NOT HAVE ANY



**DEADLINE FOR FEBRUARY ISSUE OF ESPINAS y FLORES IS
JANUARY 25th. THANK YOU!!!!**

SUCCULENT OF THE MONTH:

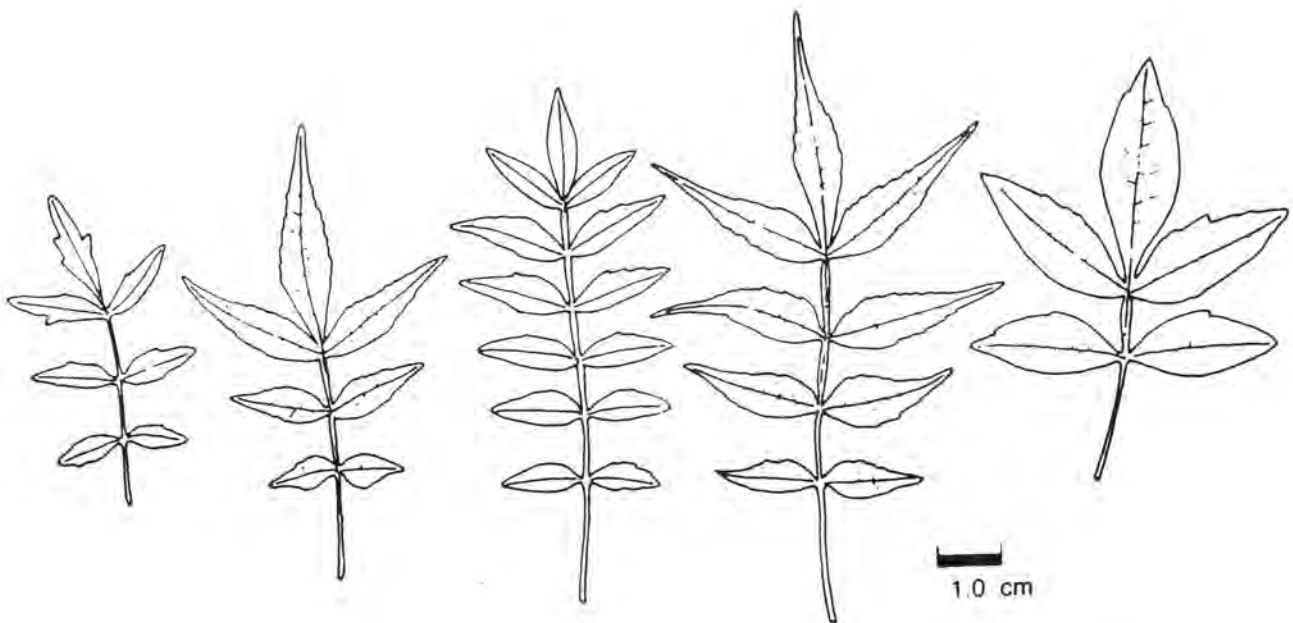
Burseraceae

by Rick Latimer

This plant family includes from 300 to 600 species in 17 to 20 genera. The family is native from tropical to subtropical regions of Asia, Africa, and the Americas. As one might expect, the greatest concentration of the more succulent members of this family reside in the drier parts of Mexico and Africa. The plant habit ranges in size from tall trees to short shrubs. The trunks and branches of many species are photosynthetic. Also the outer bark of many species flakes off in papery sheets (like other succulent pachycauls such as *Cotyledons*, *Cerarias*, etc.). Most important is the fact that the plants secrete aromatic gum, resin, or oil. Perhaps this is why the family's common name is the "Torchwood Family".

Joachin Burser, a 17th century German botanist, is who the family and the genus *Bursera* is named after. The flowers are small and inconspicuous. The fruits are also small and contain only one seed. The genus has two distinct groups. The first of the subgenus *Bullockia* has fruits that split in two and the bark does not peel (e.g., *B. hindsiana*) and the subgenus *Bursera* that has fruits that split in threes and the bark in mature plants usually peels in the dry seasons (e.g., *B. odorata*).

Only one species is native to San Diego County: *Bursera microphylla* which ventures into our own Anza-Borrego Desert. It also reaches into southwestern Arizona and heads south to Guaymas in the Mexican State of Sonora and west onto many islands in the Gulf of California and throughout most of Baja California. The leaves are pinnate. The flowers of the *Bursera* are white, but one may see plants with red tubular flowers which belong to the parasitic "Elephant Tree Mistletoe". Plants are never tall trees like for example, *B. simaruba* which can reach heights of 30 meters and trunks to one meter in diameter. While the first species mentioned has a golden colored bark, this second species has a copper-red bark. The leaves are at least five times as long. This species ranges from Sonora south along the west coast, from Tamaulipa south along the east coast of Mexico all the way down through northern South America, over many Caribbean islands and even into the tip of Florida.



Bursera lagaroides var. *elongata*

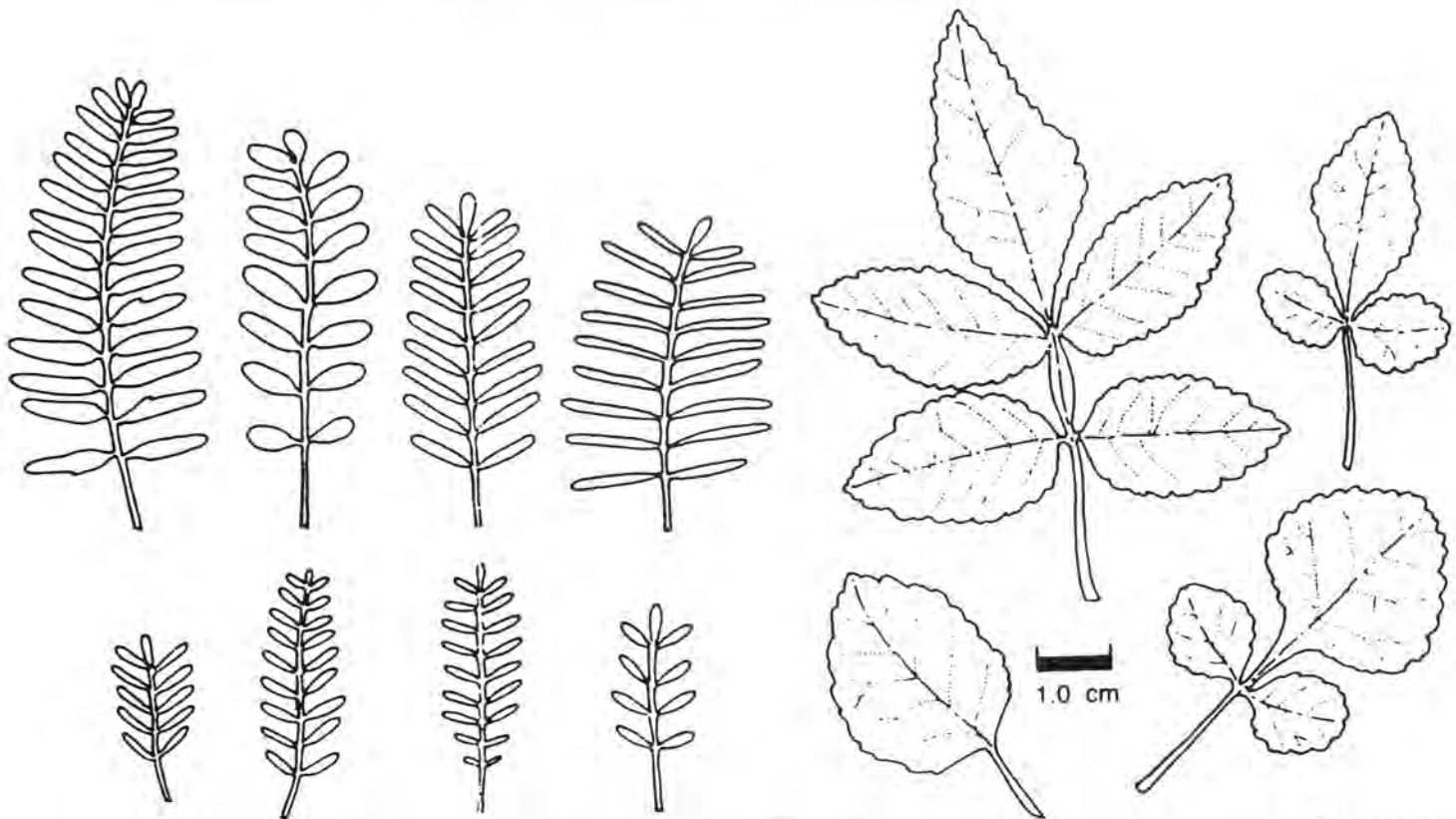
SUCCULENT OF THE MONTH: *Burseraceae* by R. Latimer continued

Closely related to this genus is *Commiphora*. Where in *Bursera* some species or portions of populations are dioecious and some plants have both staminate and pistillate flowers, and others have variable numbers of functional hermaphroditic flowers; in *Commiphora* most plants are dioecious. This second genus is rarely seen in collections. Some examples of this species (out of 190?!!) are *C. cervifolia* (Little Namaqualand), *C. schimperi* (Yemen, Somalia, Ethiopia, Uganda, Kenya, Tanzania, e. Zaire, Botswana, Zimbabwe, Mozambique, and into South Africa), and *C. myrrha* (sw Arabia, Somalia, Ethiopia, and Kenya) which is the spiny shrub that has been used since Pharaonic times by ancient Egyptians for the proper preparation of mummies. Additional species come from Madagascar, western Africa, Iran, Pakistan, India, Sri Lanka, and Brazil.

The third *Burseraceae* genus *Boswellia* includes about 20 species and ranges from the Ivory Coast to India and south to the northeastern Tanzania and northern Madagascar; it is most numerous in northeast tropical Africa. Plants may be unarmed large bushes or small to medium sized trees with flaking, peeling bark. Flowers are hermaphroditic or dioecious (*Boswellia madagascariensis*). The best known species is *B. carteri* (the source of frankincense) which grows in its home in Somalia on vertical cliffs.

REFERENCES:

- D. Dunn, "Bursera and Pachycormus", *Espinas y Flores* (23:9)
J.B. Gillett, "Burseraceae", *Flora of Tropical East Africa* (04-Apr'91)
Frank Horwood, "Succulent Safari to Africa", *CSSA Journal* (46:5)
Matthew B. Johnson, "The Genus Bursera in Sonora, Mexico, and Arizona, USA", *Desert Plants* (10:3)
Norman Roberts, *Baja California Plant Field Guide*
Gordon Rowley, *Caudiciform and Pachycaul Succulents*



Bursera microphylla

Bursera hindsiana



MEMORABLE MOMENTS by Frank Thrombley

It was a nice summer morning in 1988 when Jim Gibbons proposed his idea. Tom Parks, Jim and myself were having coffee at the Wild Animal Park and because Jim was buying, we thought we had better pay attention. His proposal was more of "we shall" and his idea was a "plan" with no compromises. After telling us of his method of action, Tom and I immediately agreed. Tom, being a superb chef, said that he would plan the meals and be the cook.

It was a beautiful warm evening, full moon and no clouds in the crystal clear sky. The kind of a night that young lads would ask their young ladies for their hand in marriage. A night that the coyotes would sing their serenades to the moon.

Jim and I went to the hotel to pick up our guests for dinner. The Bislines, Ed and Mary were ready, as was Katie McDonald and Verna Pasek, who seemed to be eager for the next phase of her adventure. These four good people have contributed many many hours and dollars to the Wild Animal Park and certainly deserved an adventure.

When we arrived at the dinner site, Tom had the table set with a table cloth, dinner plates and candles. Dinner by candlelight and of course that big beautiful moon. After seating the honored guests, Jim poured a glass of white wine for each. Tom then served baked potato, steak, and a sumptuous salad. After we finished our dinner and cleared the table Tom then brought on the dessert. Coffee and pineapple upside down cake which he baked in his dutch oven while cooking dinner.

Where did all of this take place?

Surely you must have guessed by now. It all happened among those spectacular boulders in the Central Desert of Baja, at Catavina.

The following morning we collected the four seniors at the La Pinta Hotel in Catavina, had breakfast at our campsite and then headed for Desengano. Verna wanted to meet our gentleman hermit of this desert. She consistently sent clothes and food with us each trip we planned. We always stopped to see Eliodoro and have a cup of coffee with him. This wonderful desert man was "home" at his campsite and after visiting for half an hour it was time to go back to our campsite. The next morning we left for San Diego but did take the time to visit with Senora, Donna Anita Espinosa, at El Rosario. Another memorable person of the peninsula called Baja California.

Ed and Mary Bisline were very good friends of the Wild Animal Park. They contributed financially to many of Jim Gibbon's projects at the park.

Katie McDonald was a long time member of the Palomar Cactus & Succulent Society in Escondido. She worked many long hours for the Society and at the Palomar Gardens (Palomar College) and the Del Mar Fair. In addition to this, the hours she spent as a volunteer at the Wild Animal Park took a back seat to no one.

Verna Pasek, a long time member of the San Diego Cactus & Succulent Society was a tireless worker for the society. Always helping at the plant sales table, annual plant show & sale and an avid supporter of the society. She always displayed plants at the Wild Animal Park events, and still does. She has worked in the WAP library and horticultural office as a volunteer as well.

Thank you to all of the afore mentioned persons for a memorable moment.



New publication explores the desert

Remember the old *Desert Magazine*? If you're a nature enthusiast and a long-time desert resident, you probably do. You might also remember that it ceased publication in 1985. Well, there's a new periodical in town called *American Desert Magazine* that debuted last November. Published locally by Joan Brooks, *American Desert* is inspired by, and in the tradition of, *Desert Magazine*.

"I had an urge to share with others the beauty and history of our wonderful country," Brooks said. "So much of it goes unnoticed, unappreciated and unsung." Brooks' love of the desert comes out in the magazine. Each issue contains stories and photographs from knowledgeable and talented desert writers and photographers on topics like plants, animals, history, gems, rocks, trails, book reviews and generally all natural features of North American deserts. *American Desert Magazine* is available at selected book stores in the southwest.

June-October 1993

Vol. XVIII No. 3

ENDANGERED SPECIES

Technical Bulletin

Department of Interior, Fish and Wildlife Service
Washington, D. C. 20240

BOX SCORE LISTINGS AND RECOVERY PLANS

Category	ENDANGERED		THREATENED		LISTED SPECIES TOTAL	SPECIES WITH PLANS
	U.S.	Foreign Only	U.S.	Foreign Only		
Mammals	56	250	9	22	337	34
Birds	73	153	17	0	243	72
Reptiles	16	64	18	14	112	26
Amphibians	6	8	5	0	19	9
Fishes	58	11	37	0	106	59
Snails	12	1	7	0	20	26
Clams	51	2	5	0	58	40
Crustaceans	11	0	2	0	13	4
Insects	15	4	9	0	28	14
Arachnids	5	0	0	0	5	0
Plants	324	1	78	2	405	167
TOTAL	627	494	187	38	1,346*	451**
Total U.S. Endangered	627		(303 animals, 324 plants)			
Total U.S. Threatened	187		(109 animals, 78 plants)			
Total U.S. Listed	814		(412 animals, 402 plants)			

* Separate populations of a species that are listed both as Endangered and Threatened are tallied twice. Those species are the leopard, gray wolf, grizzly bear, bald eagle, piping plover, roseate tern, chimpanzee, Nile crocodile, green sea turtle, and olive ridley sea turtle. For the purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

** There are 347 approved recovery plans. Some recovery plans cover more than one species, and a few species have separate plans covering different parts of their ranges. Recovery plans are drawn up only for listed species that occur in the United States.

Number of CITES Party Nations:

120

September 1, 1993

FROM ALL CORNERS
by Shirley Berry



The concern with salinity in our growing methods cannot be ignored considering the high PH in our water and in our soils. This problem is common to arid and semi-arid regions such as we have in San Diego.

Salts, which create salinity, are chemical compounds, some of which are acid, such as sulfate, nitrate, phosphate, and bicarbonate. Their opposites, called basic, are calcium, magnesium, potassium, and ammonium. These basic and acid components may combine in a great variety of ways.

In the agricultural publication of the University of California, called "The U.C. System for Producing Healthy Container-Grown Plants" (1957), how the problem of salinity arises is discussed in great length. Keep in mind that all nutrients for plant growth are absorbed by the plants in the form of salts.

The article in this publication by Schoonover and Sciaroni says that all salts are harmful to plants beyond the small quantity needed for growth. The problem arises when the concentration of soluble salts reaches levels that are harmful. Salts may come from fertilizer, water, or soil. Even organic materials such as dried blood, hoof and horn meal, and leaf mold become mineralized through decay processes and are finally converted into salts. An excessive use of organic or chemical fertilizers will cause salinity injury.

In addition, irrigation without proper attention to leaching may cause a build up of salts in the root zone . . . water contains salts . . . and this accumulation added to that from fertilizers may result in dangerous levels if periodic leaching is not practiced.

"It has been observed that used clay pots way also contribute to the salinity problem. Moisture evaporation on the outside surface of the pot leaves behind soluble minerals in concentrated form. Roots coming in contact with the pot may be injured or killed. This can be eliminated by soaking the port or using plastic containers."

"The question often arises as to why water softening processes cannot be used to remove salts from water for nursery use. Waters are called "hard" when they contain sufficient quantities of calcium and magnesium salts. Common water softening processes cannot be used to remove salts from water, they merely substitute sodium for equivalent quantities of calcium and magnesium salts. This produces a water which is more desirable for laundry, but much less satisfactory for irrigation."

The authors' suggestion is to use well drained soil mixtures, low in salts. They suggest using one of the five types of U.C. soil mixes. This and their formulas will be revealed in my next column (February '94).

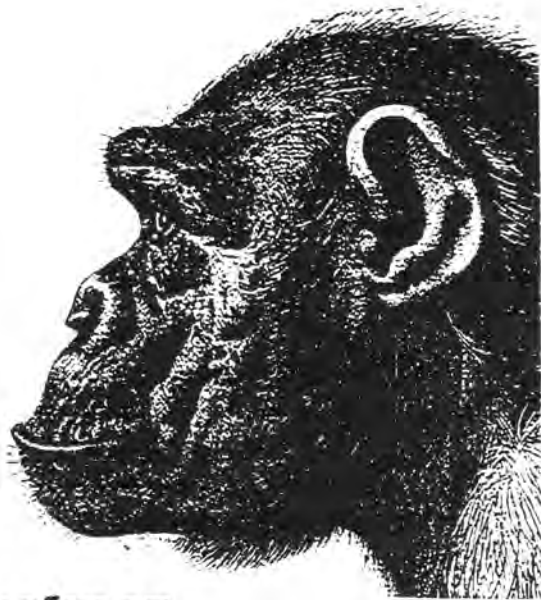
In the meantime, if you are curious or concerned about the level of salinity you are working with, there are PH testing kits available, for soil testing and others for water testing. Walter Anderson's Nursery in San Diego offers "Sudbury's Acutest", a PH soil tester for \$1.49. Aquarium supply shops carry "Modele Deluxe Test for PH" for about \$8.00 with all the necessary chemicals for arriving at the PH of the water you are using.

We would appreciate hearing from those of you who tried these testing methods and value your conclusions.

*"VIOLETS ARE BLUE
ROSES ARE PINK
ON GRAVES
OF THOSE
WHO DRIVE AND DRINK
BURMA SHAVE" (1950)*

WISE AND OTHERWISE

by Michael Buckner



PAGE 14

"For people who hate to learn the names of things, the world is getting better everyday.

Against this wave of the future, ecologists, nature lovers, and assorted cranks mount a few arguments. They say a world with fewer species is less beautiful. They say a world with fewer species is less stable. And they say a world with fewer species is immoral. Nobody pays much attention to these arguments.

Finally, as a hole card, the defenders of endangered species say that someday, somewhere, the threatened organisms may have an economic value. They point out that the genetic pool is a warehouse worth keeping choke-full. Sometimes they hint that some fish or bug or weed or beast may hold the cure for cancer.

Anyone can pick and choose among these arguments. Whatever feels best is fine, because the pressure of human numbers and human appetites promises to eliminate species wholesale and all the arguments are probably beside the point.

The best argument is undoubtedly the one that impresses the fewest people and convinces hardly anyone at all: Species are worth saving because a world with less life is less of a world.

The mosquito, Yaqui topminnow, great white shark, bedbug, and prickly pear cactus are all worth having around.

Life is not about industrial economies at the tail end of the second millennium. Life is a long-term crap game and the house rules should give everyone a roll with the dice. Imagine that the destiny of the planet is not increasing the Gross National Product or making life nicer for human beings or easier for Yaqui topminnows. Imagine that it is a mystery. Think how puzzled the tens of millions of vanished species must feel about the purpose of life.

The endangered and often useless species are messengers and what they report to us is that the world is not especially designed for people or progress or machines or civilization. That is why these organisms and plants are resented. The snail darters of the earth are not despised simply because they might stall the construction of a dam. They are hated because they suggest by their very existence that the planet is not solely a habitat put together to benefit human beings.

Every time a great white shark glides past, people have to wonder just what in the hell life is really about. A world empty of useless species will be a world with fewer tough questions.

And so the planet is becoming a better place for people who hurt their heads when they think."

-from BLUE DESERT by Charles Bowden, Univ. of AZ Press, c.1986

WISE AND

*Under the greenwood tree
Who loves to lie with me,
And tune his merry note
Unto the sweet bird's throat,
Come hither, come hither, come hither:
No enemy here shall he see,
But winter and rough weather.*



William Shakespeare

"The statement that the earth is our mother is more than a sentimental platitude: we are shaped by the earth. The characteristics of the environment in which we develop condition our biological and mental being and the quality of our life. Even were it only for selfish reasons, therefore, we must maintain variety and harmony in nature."

-Rene' Dubos, microbiologist

"I fell asleep on the grass, and awoke with a chorus of birds singing around me, and squirrels running up the trees.... and it was as pleasant and rural a scene as I ever saw, and I did not care one penny how any of the beasts or birds had been formed."

Darwin to his wife, Emma, 1858

"Observe always that everything is a result of change, and get used to thinking that there is nothing Nature loves so well as to change existing forms and to make new ones like them." Marcus Aurelius (121-180 AD)



OTHERWISE

*"January night, quiet and luminous,
near the river, among the rocks, at your side,
My heart ripe
for marvel and miracle,
If a star fell,
I should hold out my hand . . ."*

Rafael Alberto Arrieta

"Curiosity is one of the permanent and certain characteristics of a vigorous intellect."

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