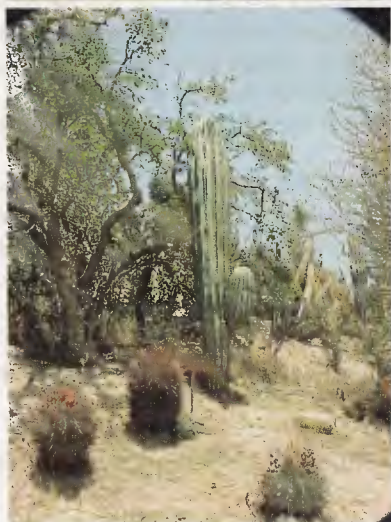


ESPINAS Y FLORES



THE NEWSLETTER OF THE SAN DIEGO CACTUS & SUCCULENT SOCIETY INC.
AFFILIATED WITH THE CACTUS & SUCCULENT SOCIETY OF AMERICA
VOLUME 39 NUMBER 9
SATURDAY SEPTEMBER 10TH, 10:00 AM - 4:00 PM
SAN DIEGO WILD ANIMAL PARK, SEE DETAILS INSIDE

PRESIDENTS MESSAGE

August 21, 2005

Greetings and salutations!

We had an interesting meeting in August. Sans any formal program or out of town aficionado speaker, we had four brief talks on various subjects near and dear to our local area.

Herb Stern brought the presentation from the Anza Borrego Foundation (www.theabf.org), and we raised an additional \$700 from the general membership towards our hopes of helping this important cause purchase another in holding within the park boundary that is rich in cacti and succulent flora.

Andrew Wilson gave us a nice presentation of constructing, maintaining, and planting a block garden, which was really interesting. A "blockery" sounds like a wonderful solution for those of us tight on space who wants to have the culture of a raised bed with a little added cultural control.

Mike Buckner put in a good pitch for the new cactus and succulent garden to be installed in honor of his Father Warren at the Cuyamaca Water Conservation Gardens, a very worthwhile cause to promote water conservation and the SDC&S Society.

Juergen Menzel gave us a nice overview of the current thinking

on the genus *Peniocereus*; highlighting the different forms within the genus and some of the idiosyncrasies in cultivating some of these intriguing plants.

Thanks to all our speakers and everyone who attended and made our August meeting a fine example of the talent and expertise in our club membership!

Well it's that time of year again and we're all getting ready for our annual picnic in lieu of a regular meeting. This year we'll be enjoying a picnic near the Baja Garden at the Wild Animal Park, where a number of our enthusiastic members have been volunteering for a number of years maintaining the cactus and succulent collection there. This will be a neat adventure for a number of us who don't usually visit this area to see firsthand the fruits of our member's labors; I'm really looking forward to it.

Remember we won't be having any formal talk at the September picnic, but there will be a lot of skilled C&S growers in attendance who will likely be happy to talk plants as long as you want to. So don't be shy if you have questions or need some assistance with something!

Looking forward to seeing you at the picnic,

Mark Fryer



AUGUST BRAG PLANT WINNERS

Cactus

1st Place: *Escobaria zilziana*

Paul & Carol Maker

2nd Place: *Trichocereus grandiflora*

Peter Walkowiak

3rd Place: *Gymnocalycium gielsdorfiana* (syn. *Gymnocactus gielsdorfiana*)

Peter Walkowiak

Succulents

1st Place: *Ipomea cornea*

Rudy Lime

2nd Place: *Euphorbia Decaryii* hybrid

Peter Walkowiak

3rd Place: *Pachypodium rosulatum* (syn. *cactipes*)

What biotic area in the U.S. contains 53% of all bird species (485) in North America? Where can 40% of all butterfly species (294) in N. America north of Mexico be found? 25% of all species of amphibians known in N. America? 33 species of snakes including 4 found only here? 35 tropical birds reaching their northernmost limit?

If you guessed the Florida Everglades, you'd be wrong. These species and many more rare, threatened and endangered ones live in an area of South Texas, the core of which consists of just 4 counties. Known by the technical name "Tamaulipan Biotic Province", the Texas Lower Rio Grande Valley (TLRGV) and its special habitats support many small populations of plants and animals found nowhere else. This unique area is as threatened in toto as some of the species barely hanging on there. Since 1970, the human population in this area has tripled. Close to 95% of the original native brushland has been cleared for human use. Cactus Conservation Institute, Inc. (the Institute) was created with a focus on restoration and preservation of one of the most threatened species, star cactus, and its habitat, in the TLRGV. Another cactus of concern, peyote, is declining and becoming locally extinct in many areas of its former range in this same habitat. The U.S. Fish & Wildlife Service (FWS) has recently released its recovery plan (the Plan) for the endangered star cactus, currently known to occur on only 20 acres in Texas. The Plan provides a blueprint that can be broadly applied to address scientifically the preservation of these two species and the natural area needed to support them.

Cultivation of the Epiphytic Ant-Plants - Hydnohytium and Myrmecodia

By, Nicholas Plummer: nplummer@duke.edu

This article was published in *Cactus and Succulent Journal* 72:142-147 (2000). It is re-printed here with permission of the author & editor.

INTRODUCTION

When we think of interactions between insects and plants in cultivation, we tend to focus on pollination or the depredations of herbivores. In nature, however, those interactions can be far more complex. Some of the most interesting symbiotic relationships involve ants and specialized plants known as Myrmecophytes which possess structures that house ant colonies. In some cases, the plants also provide food for the ants in the form of nectar or protein-rich Beltian bodies. In exchange, the Myrmecophytes receive nutrients or protection from herbivores. Two genera of Myr-



Figure 1:
Myrmecodia tuberosa in Sarawak. As seen here, Myrmecodia plants frequently grow with the tuber hanging down. Photograph by Wilson H.P. Chua. All remaining photographs by the author.

mecophytes, Hydnohytium and Myrmecodia, are of particular interest to caudiciform enthusiasts.

ANATOMY AND ECOLOGY

Hydnohytium and Myrmecodia are members of the Hydnohytinae, a subtribe of the coffee family, Rubiaceae (Huxley and Jebb, 1991). Most species of both genera are epiphytes (Figure 1), though a few grow as terrestrials in nutrient-poor highlands. In Hydnohytium and Myrmecodia, as well as the related genera Anthorrhiza, Myrmephytum, and Squamellaria, the base of

the stem develops into a large tuber. Tissue dies back within the tuber to

form a series of galleries connected to entrance holes on the surface. In some cases, tiny pores further ventilate the chambers. The chambers provide excellent nest sites for ants, and the vast majority of Myrmecodia plants examined in the wild are inhabited. Hydno-phytum are somewhat less likely to be inhabited, especially at high altitude (Huxley 1978). The primary benefit of the ant inhabitants to the plant is nutritional. The ants do not seem to protect the plants against large predators (such as botanists), and it is unclear whether the plants are protected against herbivorous insects (Janzen 1974). Experiments with radioactive tracers, however, have shown that warts within the chambers are capable of absorbing nutrients from the ants' waste, mostly leftover insect parts (Huxley, 1978; Rickson, 1979). In Myrmecodia, the internal galleries are divided into dry, smooth-walled chambers that the ants inhabit and warty chambers where they dump their garbage. The galleries of Hydno-phytum are less specialized, but the warts tend to be clustered at the ends of the chambers (Huxley 1978).

Despite their close relationship, it is easy to distinguish Hydno-phytum from Myrmecodia. Myrmecodia tend to have just one or a few thick, unbranched stems with large leaves (exceptions are *M. lamii* and *M. beccarii*). The stems of Myrmecodia are frequently covered with clypeoli, unusual shield-like structures surrounding each leaf base. The clypeoli may be bordered with spines, and they give the stem a curious armored appearance. It should be noted, however, that in some Myrmecodia species, the clypeoli are obscure or absent. Myrmecodia flowers form in hollows called alveoli

which develop along the stem between the clypeoli. Hydno-phytum have thinner stems with longer internodes and smaller leaves. They often have multiple stems which can be branched. The stems lack clypeoli and alveoli.

Myrmecodia tubers often have ridges and wart-like bumps; one unimpressed family member told me that myrmecodias look as though they have a nasty skin condition. The tubers are frequently covered with spines, actually modified roots, that can be simple or branched. In contrast, Hydno-phytum tubers generally lack spines, although one species in cultivation does have ridges. Tuber shape in both genera is very variable, and color ranges from dark brown to silvery grey.

The range of Hydno-phytum extends from Malaysia and the Philippines, south to the Cape York Peninsula in Queensland, and east as far as Fiji. It includes southern Thailand, Cambodia, and Vietnam. Myrmecodia has a similar but slightly more restricted range, with the highest species diversity in New Guinea (Huxley and Jebb, 1991; Huxley and Jebb, 1993). Unlike many epiphytes, ant-plants are quite rare in lowland rainforest. More typical habitat is open woodland where the plants are exposed to bright light; in myrmecophyte habitat, nutrient availability probably limits growth, while in deep forest, lack of light would reduce the benefit from additional nutrients provided by ants. The plants are found more frequently on branches than trunks (Huxley and Jebb, 1991) and can be very common in disturbed habitat such as plantations (Huxley, 1978). During the time that he studied *Hydno-phytum formicarum* and Myrmecodia tuberosa at Bako National Park in Sarawak, Janzen (1974) noted that rain fell almost daily in the afternoon.



Figure 2:
(Hydnophytum species mounted on bark). This is one of the plants commonly sold as *Hydnophytum formicarum*. The plant is mounted on cork bark with some osmunda fiber around the roots. The tuber is 11 cm (4.3 inches) long.

CULTIVATION

Hydnophytum and Myrmecodia are fairly large genera with 50 and 26 species respectively (Huxley and Jebb, 1991; Huxley and Jebb, 1993), but only a few are likely to be seen by amateur growers. In the United States, Hydnophytum plants commonly available from commercial nurseries fall into two categories which may be two variable species or two groups of closely related species. The first group consists of plants are usually labeled *Hydnophytum formicarum* (Figure 2). These plants have somewhat fleshy leaves with obscure veins. The tuber is usually globular or pear-shaped, and color can be grey or light brown. Large en-

trance holes frequently form on any part of the tuber. In my experience, these plants can be tricky to grow well and are quick to shed their leaves if they are allowed to dry out or become too cold. The second group are larger plants sold either as *Hydnophytum species* or *Hydnophytum formicarum*. They have narrower leaves with more prominent veins. The tuber is typically hemispherical, and entrance holes seem to be restricted to the flat underside. Often, the tuber has ridges which may be barely visible or very prominent (Figure 3) and (Figure 4).



Figure 3: Hydnophytum species with ridged tuber. The leaves have more prominent veins than those of the plant in Figure 2. This is a three year-old seedling growing in an 8 inch bulb pan. The plant is 27 cm (10.6 inches) tall with a tuber diameter of 12.5 cm (4.9 inches).

These plants seem to be easier to grow than the first group and are less likely to shed leaves when under-watered. Other species may be growing in botanic gardens, but they are



Figure 4: Hydnohytium seedling with prominently ridged tuber. Compared to the plant in Figure 3, this seedling has narrower leaves and a more prominently ridged tuber. It remains to be seen whether these characteristics are retained at maturity. The tuber is 6.5 cm (2.5 inches) in diameter.

not widely available to amateur growers. Unfortunately, I have not been able to positively identify any of my Hydnohytium plants, due to the difficulty of finding literature on the genus.

The genus *Myrmecodia* has been recently revised by C.R. Huxley and M.H.P. Jebb (1993), so cultivated *Myrmecodias* are easier to identify. The majority of *Myrmecodias* offered for sale are forms of the widespread and very variable species *Myrmecodia tuberosa* (Figure 1) and (Figure 5). *M. echinata* is a synonym that is sometimes still seen on plant labels. This species has brown or greyish tubers, stems that sometimes lack clypeoli, and spines that can be simple or

branched. Numerous entrance holes are often visible in arcs on the upper surface of the tuber. The plant distributed by the Huntington Botanic Gardens plant sales as *Myrmecodia* sp. #51501 is *M. tuberosa* from Sarawak, Malaysia. The original material was collected in Bako National Park and first grown at the Marie Selby Botanic Gardens (Donna Atwood, personal communication). *Myrmecodia solomonensis* plant sometimes offered for sale, is s, considered a variety of *M. tuberosa* by Huxley and Jebb, and a *Myrmecodia* sp. from New Britain is probably *M. tuberosa* "dahlia". At least some of the plants sold as *M. platyrea* (sic) are also *M. tuberosa*.



Figure 5: *Myrmecodia tuberosa* seedlings. Left, *M. tuberosa* from Bako National Park, Sarawak, Malaysia. This plant may correspond to Huxley and Jebb's (1993) "*M. tuberosa* "bracteata". Right, The variety sold as *Myrmecodia solomonensis* (Huxley and Jebb's *M. tuberosa* "salomonensis". Both seedlings are one year old and about 9 cm (3.5 inches) tall.

Other plants in my collection include a young *M. beccarii* and a plant from New Guinea which might be *M. platytyrea* (Figure 6). *M. beccarii* is a lowland species from northern Australia which often grows on man-



Figure 6: Myrmecodia species from Papua New Guinea. This mature plant seems to fit the description of *M. platytyrea* (Huxley and Jebb, 1993). Clypeoli and alveoli are visible on the stem. The plant is growing in esmunda fiber in a 4 inch clay pot. The tuber is 13 cm (5.1 inches) long.

groves. It is characterized by its small, succulent leaves and its tendency to produce multiple stems. The putative *M. platytyrea* has large, circular clypeoli and a silvery grey tuber covered with warts. Another plant of unknown origin has very similar clypeoli but the tuber is brownish and globular.

The related genera Anthorrhiza, Myrmephytum, and Squamelaria, do not seem to be widely grown. I am aware of a single Anthorrhiza specimen on display at the University of Oxford Botanic Gardens in England, but no others. I would definitely be interested to hear reports of other plants in cultivation.

The Myrmecodias common in cultivation are lowland species found

at altitudes below 1000 meters (Huxley and Jebb, 1993). The Hydnohytums are also likely to be lowlanders, though this is uncertain in the absence of collection data or definitive identification. The habitat preferences of ant-plants summarized above would suggest cultivation in warm temperatures with high humidity and bright light, though some protection from mid-day sun may be warranted. In North Carolina, I grow my plants outside in summer where they experience high humidity and direct sun after about 2:00 pm. Daytime temperatures are commonly 90-95° F. (32-35° C.), and nighttime temperatures drop to the 60's (15-20° C.). I would not risk prolonged exposure to temperatures much below 60° F. (15° C.). In winter, the plants grow under fluorescent lights with my orchid collection or on a sunny windowsill.

Many growers successfully use a mix of peat and perlite, but I prefer a combination of long-fiber sphagnum moss, chopped fir bark, and perlite which is very open but retains moisture. The plants are watered when the mix is just barely moist, because sphagnum is difficult to re-wet if it is allowed to become bone dry. Either plastic or clay pots are suitable depending on one's watering habits. If humidity is high, plants can be mounted on cork bark or tree fern plaques for a more natural appearance (Figure 2).

Mounted plants will, of course, require more frequent watering. The roots of Hydnohytum and Myrmecodia are very brittle, so great care must be taken when repotting. Luckily, however, the plants seem capable of producing new roots from any part of the tuber that is in contact with a moist substrate.

Jolivet (1996) reports that cultivated plants without ants are stunted, but this does not seem to be the case if plants are fertilized. Any balanced fertilizer with trace elements should be suitable. I use Dyna-Gro 7:9:5 at a rate of 1/2 tsp per gallon every second watering, and I thoroughly flush the pots with water on days when I do not fertilize. Sphagnum moss frequently sprouts from spores in my potting mix, indicating that this procedure prevents buildup of fertilizer salts. Moss growth is especially luxuriant in flats of seedlings which are never allowed to dry out.

PESTS AND DISEASES

Ant-plants are susceptible to a number of common pests such as scale and mealybugs. In general, the thin-leaved myrmecodias seem to be more seriously affected than hydno-phytums. In dry weather, mites can be a real problem. Check the undersides of leaves for tell-tale webs and silvery scarring. Since my plants are grown as houseplants at least part of the year, I tend not to use toxic systemic pesticides. Washing the foliage with tepid water keeps spider mites under control, and spraying with insecticidal soap or pyrethrin kills scale. Squashing the pests is also an effective and ecologically sound method of controlling them in a small collection; there is no danger of scale evolving resistance to your thumbnail.

In addition to occasional infestations of mites, my Myrmecodias seem especially prone to developing ugly brown bumps on the leaves. The bumps begin as whitish swellings on a newly developing leaf and later form a hard corky skin. These defects occur

on plants from a variety of sources, and some photographs of wild plants show evidence of the same problem. I suspect that this is not a disease, but rather that it is edema due to low light and excess water. The defects are most severe during cool, dull winter weather and much reduced or completely absent in summer when the plants receive more sunlight. In addition to increasing light intensity, reduction of watering may also help, though underwatering will result in defoliation in some species. Interestingly, my Hydno-phytums seem immune to this problem, and in *Myrmecodia beccarii*, the defects are generally restricted to the petiole. Perhaps the thicker leaves of these species are more resistant to the swelling.

Cold wet weather, injury during shipping, or other accidents may result in rotting of the tuber. This can disfigure the plant but need not be fatal if caught early. The rotten portion should be scraped off to expose healthy tissue and dusted with something to dry out the wound. I have used powdered cinnamon, which among orchid growers is reputed to have anti-bacterial properties. If necessary, the plant can be repotted so that the injured portion of the tuber is not in contact with wet potting mix. Small seedlings will occasionally lose their growing stem to rot if they are too wet during shipping. As long as the tuber remains firm, these seedlings should be potted up, as they often sprout new stems and may produce interesting multi-branched specimens.

PROPAGATION

According to Huxley and Jebb

(1991), cuttings from *Hydnophytum* stems will root and grow but do not produce a tuber. Luckily, *Hydnophytum* and *Myrmecodia* are very easy to grow from seed. The small white flowers of *Myrmecodia tuberosa* and the *Hydnophytum* species in cultivation are self-pollinating. When ripe, the fruit of *Hydnophytum* and *Myrmecodia* are bright orange or pink and easily detached from the stem. In *Hydnophytum*, unripe fruit is visible on the stem, but in *Myrmecodia*, the fruit does not protrude from the alveolus until it is ripe. Depending on the species, each fruit contains between one and seven seeds. Janzen (1974) reports that dry seed of *Hydnophytum formicarum* remains viable for at least four months, but I have not had much luck storing dry seed and recommend that it be sown immediately after harvesting. The seed should be removed from the fleshy fruit and sown on a moist surface; sphagnum moss is excellent for this purpose. In a pinch, the seed can be sprinkled around the base of the mother plant. Do not bury the seed. Fresh seed germinates within a week, and the initial swelling of the tuber is visible almost immediately. Seedlings grow rapidly under fluorescent lights if kept constantly moist. Even very young seedlings can be shipped successfully if wrapped in damp (but not wet!) paper towels and sealed in a plastic bag. For shipping seed, it seems best to send intact fruit rather than dry seed which may fail to germinate.

CONCLUSION

Hydnophytum and *Myrmecodia* are definitely worthy of a place in any collection of caudiciform plants, and it is a shame that only a handful of

species from such large, diverse genera are currently available. I can only echo Kimnach (1996) in hoping that more species will be introduced into cultivation. It would be wonderful to grow the giant *Myrmecodia lamii* (Kinnach 1996), the densely spiny *M. augustifolia* and *M. tuberosa* "pulvinata" (Huxley and Jebb, 1993), or *Hydnophytum guppyanum* with its bizarre tuber (Huxley and Jebb, 1991). Until that time, the commonly available *Hydnophytum* and *Myrmecodia tuberosa* varieties will reward growers with a variety of shapes that can be elegant, unusual, and sometimes breathtaking in their ugliness.

ACKNOWLEDGMENTS

I thank Tim Devine for generosity with seeds and seedlings, Wilson H.F. Chua for photographs of *Myrmecodia* in habitat, and Barry Sullender for interesting discussion and helpful pointers to the literature.

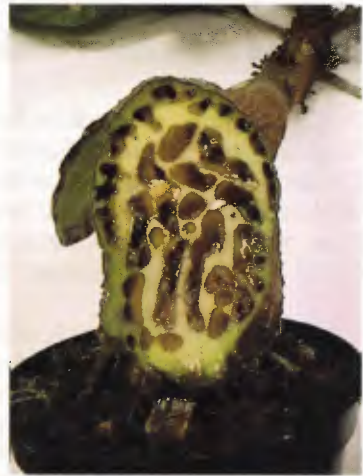
REFERENCES

- Huxley, C.R. 1978. The ant-plants *Myrmecodia* and *Hydnophytum* (Rubiaceae), and the relationships between their morphology, ant occupants, physiology and ecology. *New Phytol.* 80:231-268.
- Huxley, C.R., and Jebb, M.H.P. 1991. The tuberous epiphytes of the Rubiaceae 1: A new subtribe of the *Hydnophytinae*. *Blumea* 36:1-20
- Huxley, C.R., and Jebb, M.H.P. 1993. The tuberous epiphytes of the Rubiaceae 5: A Revision of *Myrmecodia*. *Blumea* 37:271-334
- Janzen, D.H. 1974. Epiphytic *Myrmecophytes* in Sarawak: Mutualism through feeding of plants by ants.

Biotropica 6:237-259.

Jolivet, P. 1996. Ants and Plants: an Example of Coevolution. Backhuys, Leiden. Kimnach, M. 1996. *Myrmecodia lamii*, a giant ant-plant of Irian Jaya. Cactus and Succulent Journal 68:134-141.

Rickson, F.R. 1979. Absorption of animal tissue breakdown products into a plant stem—the feeding of a plant by ants. American Journal of Botany 66:87-90.



The tuber of this cultivated specimen has been sectioned to reveal the interior chambers. In the upper picture, superficial honeycomb chambers are visible at the top of the tuber and smooth inner chambers at the center. In the lower picture, arrows indicate two warty chambers. See Huxley (1978) for a more detailed description of chamber morphology and development.

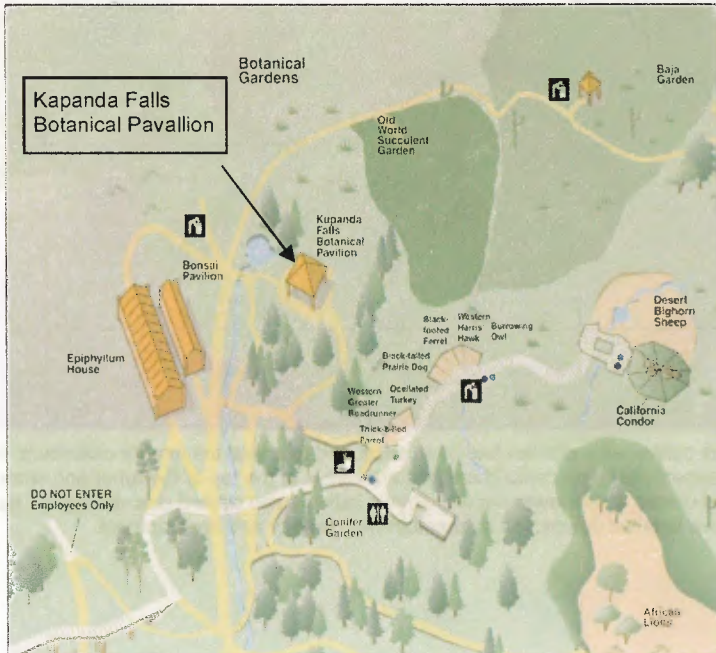
SDCSS Annual Picnic at The Wild Animal Park

Our annual picnic will be held Saturday, September 10th from 10 to 4 at the Kapunda Falls Botanical Center at the Wild Animal Park in Escondido. The Center is located right below the Old World Succulent Garden. Cost for the picnic is \$5 for guest and free for SDCSS active members. One guest per member please. If you are not a current member of the SD Zoological Society please contact Chris Miller for a pass.

We are providing lunch which will be served around noon. Please bring a desert or finger food to share. Anyone who has not confirmed by e-mail, phone or in person at the August meeting, please contact Chris before September 1st. There are still many names on the list that was passed at the July meeting that have not confirmed. Even though we are not charging members for lunch, we do need a head count to make sure we have enough food and drinks.

The Horticulture Department at the WAP has provided the location and the passes in thanks for our continued maintenance of our two gardens. This is a great opportunity to spend the afternoon enjoying our gardens and each others company.

Chris
619-258-9810 - home
619-556-2987 - work
c.miller@cox.net



THE LIBRARY CORNER

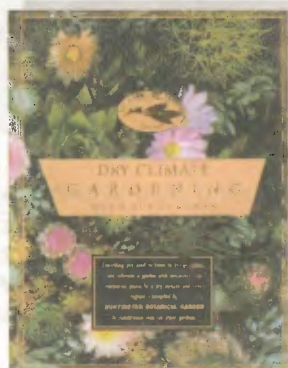


Dear Friends,

Since we live in a semi-arid climate here in southern California, it is a good thing if we take into consideration using plants in our landscape which are drought resistant and tolerant of the sometimes harsh conditions. Xeriscaping is creating a landscape using a wide variety of plants selected for their water efficiency to create a lush, oasis-like feeling (Greek word "xeros" meaning dry, and "scape" meaning a kind of view or scene). Zero-scaping is virtually the same, except this approach uses rock formations and usually plants like juniper, cacti, and yucca, to create a more western appearance. We like to include logs and tree branches, too. With careful plant selection and design, water usage can be cut by 50%. And in some neighborhoods such as Clairemont, you don't have to water at all if you're smart about it. We have to give credit for some of this information to the City of Albuquerque, www.cabq.gov/waterconservation/xeric.

So, if you want to change your landscaping, our library has some books with pictures and ideas for designs for your home garden. You can even put it in block form, right Andy?! Some of these are: Dry Climate Gardening with Succulents (The Huntington Botanical Gardens) by Debra Brown Folsom, Ph.D.; Desert Gardens by Melba Levick and Gary Lyons; Lotusland, A Photographic Odyssey by Theodore Roosevelt Gardner, II; and The Ultimate Book of Cacti & Succulents by Miles Anderson.

Your lovely librarians,
Jan Kent and Phil Kent

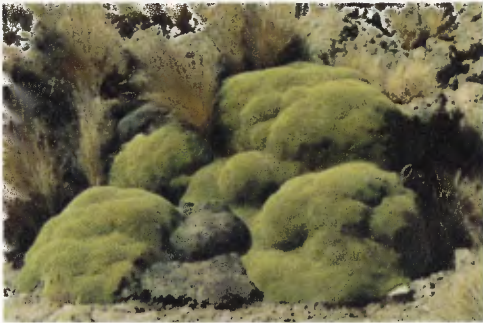


Spring in Northern Chile

By, Kay Quijada

Traveling with Joe and 6 other "plant people" from the San Francisco area, we flew to the northern coastal city of Arica, Chile, and immediately headed east towards Lauca National Park in the Andes. We stayed in the village of Putre, elevation 11,500 feet, to help acclimatize quicker to the higher altitude of the Andes. From Putre, we took day trips up to the thin air of the altiplano (highlands) of Lauca. Spectacular views were everywhere. There were snow-covered volcanoes, wild herds of vicunas, rock-dwelling vizcachas, a lake with pink flamingos, colorful hills, and the bluest sky we'd ever seen.

We were amazed to see the green cushion-like plant called *Azorella compacta*, growing in the high desert altitudes of 14,000 to 15,000 feet.



Traveling around in the high elevations we saw a few cactus; *Eulychnia*, *Maihueiopsis*, and *Oreocercus* species. On the way back to Arica we traveled through an area of enor-

mous sand dunes where a number of stately *Browningia candelaris* grew.



We then flew south to the coastal city of Antofagasta and drove south into the beautiful Atacama Desert to Copiapo. One of the interesting sights seen in the Atacama Desert is the process of natural plant death. The Atacama is almost barren of bacteria. This fact became apparent to us as we realized the piles of white ash found around dead plants was not from burning, but from the very slow process of plant material disintegration due to low populations of bacteria. Since then, I've read that the plant disintegration process in the Atacama may take decades.

As we made our way around the coastal and desert canyons from Taltal to Caldera, we managed to see a number of Copiapoa and *Eulychnia* species (some blooming), a *Cistanthe* species with red pompom flowers, *Deuterochnia chrysantha*, *Oxalis gigantea*, beautiful scenery, and braying wild Guanacos. Chile is a spectacular place, indeed.

UPCOMING EVENTS

2005

August 20, 21st: Intercity Show & Sale, 18th annual; LA Arboretum 626-798-2430, 818-998-9306

Sept 3rd: 21st Annual Succulent Symposium; Huntington Gardens

Sept 4th: CSSA Board Meeting, HBG

September 5: Show & Sale: Arizona Cactus & Succulent Research Inc, Annual Fiesta Labor Day

September 5: Show & Sale: Sarasota Succulent Society and Experimental Gardens. Wilda Q. Meier, 941-924-0706, wqmeier@aol.com

September 8: Monterey Bay Area C & SS Show & Sale, Jardines Restaurant, 115 Third St., San Juan Bautista, CA from 9 to 5. p.m. (831.), 758,-6645, or e,-mail pantry@montereybay.com. Free admission.

September 9 - 10: Show & Sale: Cascade C&SS of Washington State, University of Washington, Center for Urban Horticulture, Seattle WA

September 10th: SDCSS Annual Picnic, Kapunda Falls at the San Diego Wild Animal Park

September 10 - 11: Show & Sale: Houston C&SS, Houston Arboretum & Nature Center, 4501 Woodway, Houston TX

September 10 - 11: Show & Sale: Kansas City C&SS, Ward Parkway Mall, 85th and Ward Parkway, Kansas City, MO, Eva Allen 816-444-9321
emallen@earthlink.net

September 25th: Long Beach C&SS Annual Auction; 18127 So. Alameda St, Compton CA

October 8th: SDCSS General Meeting & Plant Sales

October 15: Texas Association of Cactus and Succulent Societies Fall Seminar/ Dallas Arboretum/ 8 am - 5 pm /contact Harold Messmore at 972-313-1710 or Messmore97@aol.com for more info.

October 15,16: San Gabriel C&SS Winter show & sale; LA Arboretum; 301 N. Baldwin, Arcadia, CA

November 2nd: Epiphyllum Society Meeting; LA Arboretum; Tim Nomer will give talk on Digital Photography of Plants – Taking Good Pictures, Organizing and Cropping Pix, Framing & Making Displays If you missed this talk two years ago at OCCSS, and can make it, you're welcome to stop by.

November 12th: SDCSS General Meeting & Plant Sales

December 10th: SDCSS Holiday Party, details to follow

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Terry Parr (619) 460-9111
Herb Stern (619) 223-9134

Standing Committees & Sub Committees

Conservation: Kelly Griffin
Education & Exhibits
Brag Table: Kay Quijada
Plants of the Month:
Jeff Harris

Summer Show: Tom Knapik, Jeff Harris
Susan Hopkins & Allen Clark
Winter Show: Ed DeLollis & Allen Clark
History: Terry Parr
Liaison

Balboa Park Desert Garden: Susan Hopkins
CSSA Affiliate Rep: Kelly Griffin
Quail Botanical Gardens: Phyllis Flechsig
San Diego Botanical Garden Foundation:
George Plaisted
San Diego Floral Association:
Elizabeth Glover
San Diego Wild Animal Park Baja California
Garden & Succulent Collections:
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Library: Phil Bunch, Phil & Jan Kent,

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Membership: Collette Parr
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Plants: Michelle Heckathorn & Sara Schell
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Auction & Holiday Plants:
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Benefit Table: Lee Badger
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Jeff Harris & Joe Kraatz
Monthly Supply Sales:
George & Jerry Plaisted
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Programs: Kelly Griffin
Reception: Ethel Standish
Regalement
Monthly: Allen Clark, Rudy Lime &
Suzie White

The fee for membership in which will be the monthly amount of the amount being republished one month in advance. The fee for the entire year will be the "Member's Magazine" will be one year. All subscriptions are to be made to the Editor.