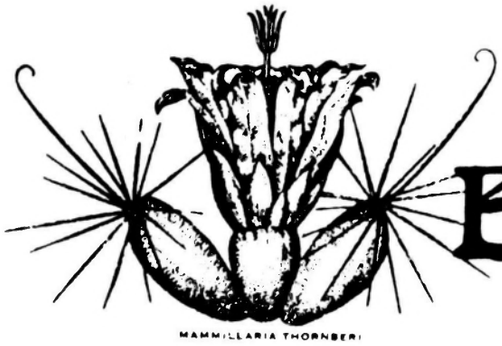


Espinas y Flores

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

Volume XIX, Number 12 December 1, 1984

Holiday Greetings

DECEMBER MEETING

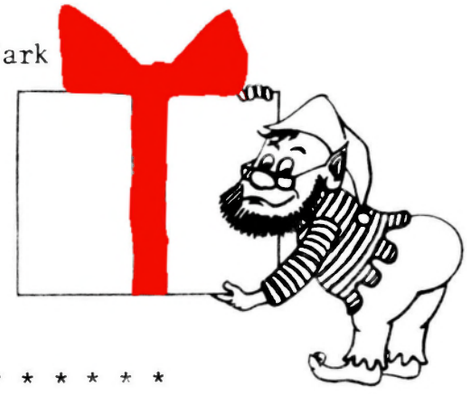
Saturday December 1, 1984

1:30 P.M.

Casa Del Prado, Room 101, Balboa Park

PROGRAM

Election of Officers
Special Plant Exchange
Dinner promptly at 2:00
Distribution of gift plants
to all members present



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IN THIS ISSUE page

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Deadline for the January Issue is December 28. Hope you have very happy holidays. Best wishes to you all.

* *

Absolutely

NO ONE will be admitted to the Christmas party unless they are a registered member who has signed up for the party. Please do not embarrass us or yourselves by bringing anyone else to be turned away at the door.

* *

NEWS NEWS NEWS

Bragging plant winners ---

1st place Teresita Lime for her Euphorpia stellata and Eurphorpia crispa

2nd place Jerry Brattmiller for his Mammalopsis senilis

3rd place Rudy Lime for his Mammillaria Gemnispina crest

* *

DUES ARE DUE - Please pay your dues to Warren Buckner, Treasurer, by the February meeting. The dues are $8.00 to the first member of a family, $2.00 for each family member of the same household. All priviledges of membership will be withheld after the meeting in February.

* *

THANKS to Tony D'Attillo for donating plants to the sale table.

* *

WELCOME TO NEW MEMBERS

Mildred M. Bradley of San Diego and Maurine H. Murray of La Jolla

* *

Reprinted from the "California Garden" magazine with thanks

FIRST ELECTRICALLY LIGHTED CHRISTMAS TREE

A tradition that spread around the world was started at Hotel Del Coronado in 1904. The suggestion of Mrs. Martha Ingersoll Robinson, mother of Mrs. Joshua Baily of San Diego, led to this first-in-the-nation electrically lighted outdoor living Christmas tree. Carl H. Messner of Pacific Beach did the electrical wiring. It has been siad that Thomas Edison pulled the switch that lighted the tree.

Hotel Del Coronado has continued this tradition over the years.

Miniature Agaves

Leroy N. Phelps, Ph.D.

The miniature agaves (century plants) I define as those under 18 inches when mature. Some larger ones will remain under this size when grown in pots, so for practical purposes any agave that I can grow in a 12 inch diameter pot may be found in my collection.

I collect the agaves for their fantastic forms, not for the flower. Most agaves have a rather non-descript petal-less flower standing above the plant, and this does signal the death of the plant either immediately or in a couple of years. Many of the agaves will pup either before or after flowering, so the death of the parent plant doesn't mean you've lost the species. The name 'century plant' only indicates it takes several years to flower, not a century!

Almost all of my agaves are grown in a mixture of potting soil and pumice (equal parts). I use a pot that is an inch or two larger than the diameter of the rosette except for the larger plants which are allowed to overlap the edge of the pot. I feed a liquid fertilizer every two or three weeks when they're growing, and water at least once a week. The fertilizer should be high in phosphorus (mine is 8-8-8). With the exception given below, all my plants are in full sun and are exposed to the winter rains. I repot the smaller agaves as they grow, but once at their full size I may not repot for many years, if ever. When I do repot, I cut all roots back to about three inches and water immediately after they have been placed in new soil. This repotting can take place any time of the year, but usually in spring.

The most famous miniature agave is *Agave pumila*, but it is not a true miniature! Most authors refer to this plant as being the smallest of all agaves, but I know of several plants over 2 feet in diameter and I have one in a pot that is 18 inches in diameter. This plant has been known for over 100 years, and at one time was worth more that its weight in gold. It has never been rediscovered in nature, and its true identity is unknown since it apparently has never flowered in cultivation. The immature form, the one usually seen, has very short, fat leaves with only a few weak teeth and many dark stripes on the undersides of the leaves. The mature form has very long leaves with more prominent teeth and few dark stripes--it doesn't look like the same species! The young plant will occasionally pup, but mine haven't! One way to force pupping is to stab the young plant with a knife through the heart of the plant two times! Rather drastic, and even then the plant may recover without pupping.

There are several species of miniature agaves with white threads on the edges of the leaves. The smallest of all agaves to my knowledge is *A. parviflora*, a native of Arizona and Sonora. It has leaves about 4 inches long and 1/2 inch wide with white markings. This plant pups only after flowering (in 7 to 10 years), and the mother plant will live up to 4 years afterwards. It does not flower again. I have flowered this plant in a pot 4 inches wide and 3 inches deep, but it looks better in a slightly larger pot. The flower spike is over 3 feet tall with many

rusty colored flowers without petals. Closely related is *A. polianthiflora*, also from Arizona. The plants are nearly identical in appearance, but this one has red flowers--the only red-flowered agave.

Another of the thread-leaved miniatures is *A. toumeyana* var. *bella*. This plant forms clusters, each individual of which looks somewhat like the plants above. The leaves are slightly thicker, and the threads are heavier. I have had this plant over 15 years, and it has never flowered. Considered by many the most beautiful of the thread-leaved agaves is *A. filifera* var. *compacta*. This variety has leaves about 4 inches long and over one inch wide. They are very dark green with a few white markings and are almost flat. This plant pups sparingly, and is the most sensitive to overwatering of any I have.

The most beautiful agave to me is a variety of the Queen Victoria agave, *A. victoriae-reginae* forma *ornatum*. The typical form grows to about 18 inches in diameter and has dark green leaves with narrow white markings. This form grows very slowly to about 9 inches, has darker green leaves and the white markings are very wide. The leaves tend to curl in at the top forming a ball. This form produces pups only for the first 3 or 4 years as do the other forms, and not many of them. The typical form flowers at about 20 years of age. My oldest plant of this form is about 16 years old. Don't over pot this one! I tried to grow some pups faster by overpotting, and lost every one of them.

If you should admire the spines of the agaves, one of the best to see is *A. utahensis* var. *nevadensis*. This plant comes from the western United States as the name indicates, and has spines from one to two inches long on leaves that rarely get longer than about 6 inches. The leaves are usually about 1 inch wide and are a gray-green in color. There are also rather magnificient teeth on the leaves. In my experience this plant needs to be slightly overpotted for good growth.

The plant with the most magnificent teeth among the miniatures is *A. margaritae* from the islands off Baja California. The leaves are very wide and rather short and very thick. They may get up to 18 inches in diameter. The teeth stick out in all directions on the edges of the leaves and are very heavy. Don't get caught on this one! The plant has an overall gray color. This species is difficult to re-root in my experience, and I never trim the roots as drastically as I do with others. This plant pups sparingly, and with the difficulty of re-rooting and its rarity in nature it will always remain difficult for the collector to obtain. Another agave I've just added to my collection which looks very similar is *A. cerulata* var. *subcerulata* from mainland Baja. This plant pups more frequently and reroots readily. It may be somewhat smaller when mature.

Another of my favorites has always been *A. verschaffeltii* (possibly a variety of *A. potatorum*). It does get 18 inches in diameter, but looks like a more refined form of the plants above. I was fortunate to get a variegation in this species and now have one small plant that is fully variegated. Most exciting of all is the cultivar 'Shoji raijin' from Japan (or is it a form which should be called *minima*?). This plant has flat, heavily toothed leaves up to 2 inches wide and long. It pups heavily at each leaf base and forms a cluster 6 inches or more in diameter in a couple of years. The only way to remove these pups is to uproot the plant and peel leaves and pups off--not a thing one wants to do frequently. This cultivar is very beautiful and is the only agave I have that seems to prefer less than half sun.

The narrowest-leaved agave I have is *A. echinoides*. It gets to about 6 inches in diameter and pups heavily at the base. The leaves are about 6 inches long, are finely grooved, and stand very upright. This is truly a porcupine plant since there are many leaves and each has an extremely sharp spine. *A. stricta* var.*nana* has shorter and thicker leaves, but otherwise is very similar.

The strangest agave I have is probably *A. nizandensis*. It just doesn't look like an agave! A mature plant usually has no more than 10 or 12 leaves. These leaves are about 8 inches long, less than one inch wide and about as thick. They are flat on top and round on the bottom. In full sun they turn a very dark purple. Also, they are very soft, toothless and nearly spineless. Snails love them! My plants are very fast growing, the pups reaching full size and blooming in 3 years! Not a very good example of a century plant. The flower spike is about 5 feet tall with very unspectacular flowers. In my experience the plant only pups after flowering, and then only a few.

I have nearly 40 agaves I consider miniatures, but the ones I've mentioned will give an idea of the diversity of these plants. Many of my plants are not identified, and some of the named ones are still too immature to describe properly. I am very excited about a dwarf form of *A. zebra* I was recently given--it may be one of the gems of my collection.

My primary source of information remains The Agaves, The Cactus and Succulent Journal 1968 Yearbook, by August J. Breitung. This slim volume has a great number of pictures and descriptions of the agaves. My expectations of Howard Scott Gentry's book, Agaves of Continental North America (University of Arizona Press, 1982) were not met. I do use this latter book as a reference, but I seem to get more usable information from the first book! Alas, many of the individual plants I have fit no descriptions in either book. Some of them may merely be leaf variations of known species, but identification will be possible only when they flower. This article is a much-revised form of an article which appeared in the January-February issue of 1984 of California Garden, published by the San Diego Floral Association, Inc.

Slate of Officers

President --- Lee Phelps
Vice President --- Jim Dice
Treasurer ---Warren Buckner
Recording Secretary --- Susan Clements

Nominations may be made from the floor, but the person nominated must be willing to serve.

After much discussion the change in the by-laws was passed.

THE GENUS BORZICACTUS (BORZICACTINAE)
(According to Myron Kimnach)

In dealing with this complex, confused, and very diverse group of plants, we are more or less forced to consider two almost totally opposed points of view - those of Kimnach, the "lumper", and Backeberg, the "splitter". Whereas Kimnach has reduced several former - and for the most part - familiar genera under his "umbrella" genus Borzicactus, and recognizes only 18 species and no varieties (as of 1960) Backeberg upholds all of these genera (and more!) as separate, distinct, and valid, and recognizes 70 species and numerous varieties. Kimnach defends his position as follows: "Far from being a reactionary procedure, as Backeberg has implied, the uniting of weak taxa is a basic, progressive technique in taxonomy, and one which has been insufficiently applied in the Cactaceae." Backeberg maintains that "any study of the strongly differentiated genera he (Kimnach) proposes uniting makes it clear that this is a needless reversion to outdated large genera".

According to Kimnach (and, earlier, Buxbaum) the subtribe Borzicactinae originally contained the following genera: Cleistocactus; Oreocereus; Borzicactus; Oroya; Denmoza; Arequipa; Matucana; Morawetzia; Seticereus; Clistanthocereus; Loxanthocereus; Arequipiopsis; Maritimocereus; Bolivicereus; Submatucana; and Cephalocleistocactus. In his Revision of Borzicactus (1960) Kimnach retains only four of these as separate and distinct genera under Borzicactinae. They are: (1) Oroya (the most botanically isolated genus), consisting of a single, highly variable species, O. peruviana, which Backeberg considers as being allied to such genera as Parodia and Gymnocalycium, and which Buxbaum and Kimnach regard as a highly-advanced member of the Borzicactinae; (2) Cleistocactus (including Cephalocleistocactus); (3) Denmoza, consisting of one or two species, and (4) Borzicactus, now containing the other eleven (former) genera. Kimnach does not regard stem form alone as sufficient to characterize a genus in this group and for this reason he rejects Arequipa and Matucana as untenable despite their globose forms. He also rejects spine characteristics as a basis for classification, so considers Oreocereus (with hirsute stems) and Cephalocleistocactus (with a pseudocephalium) unacceptable as separate genera. It all comes back to the fact that, as in all plant classification since the time of Linnaeus, the flower remains the primary basis for defining genera and determining species. And, in the case of Borzicactus, the deciding factor is just one portion of the flower, for Kimnach goes on to say: "The stems may be globose to columnar, hairy, spiny, or spineless, the flowers may even possess slight botanical differences, but they all have one conspicuous characteristic in common - the flowers all have an expanded zygomorphic limb, bilaterally symmetrical, and much resembling the flower of an Aporocactus ("Rat-tail") or Schlumbergera ("Christmas Cactus").

Kimnach, along with Buxbaum and Backeberg, believes that the Borzicactinae subtribe is an "advanced derivative" of the group containing Trichocereus and Haageocereus. The most primitive genera of the Borzicactinae are Loxanthocereus and Maritimocereus (which most resemble Haageocereus), and these are restricted to coastal Peru. A more advanced group contains Borzicactus, Clistanthocereus, and Seticereus, and Matucana (still more advanced), and Oroya (most advanced). These genera range from central Peru to Ecuador. The "southern line" - distributed over Chile, Argentina, Bolivia, Peru, Paraguay, and Uruguay - consists of Oreocerus, Morawetzia, Bolivicereus, Arequipa, Cleistocactus, Cephalocleistocactus, and Denmoza.

So, in the single genus Borzicactus we now have what is unavoidably a very diverse and, at first glance, seemingly unrelated group of plants of many different shapes and sizes, growth habits, and types of spination, and distributed geographically over quite a wide area of South America. The genus originally included only certain columnar species from Ecuador, Peru, And Chile, all with zygomorphic, mostly red flowers. The name commemorates Professor Antonio Borzi, the former director of the Botanical Garden at Palermo. One of the most familiar species, B. icosagonus, was discovered in 1802 in the Andes of southern Ecuador and northern Peru at altitudes between 5300 and 6500 feet. It grows on isolated rocky slopes, without any soil, in association with bromeliads such as Vriesas and Tillandsias. The plants are encrusted with lichens as a result of the high atmospheric moisture.

Borzicactus (Hildewintera) aureispinus, another familiar plant, was described in 1962 and is native to the foothills of the Andes, where it grows on sheer sandstone cliffs with the stems hanging down the rock face. It is a fast-growing, free-flowering pendant plant with dense delicate golden spines, branching freely from the base.

Closely related to B. aureispinus is another Bolivian cactus, Borzicactus (Bolivicereus) samaipatanus, which was discovered by Martin Cardenas and described in 1951. It grows at an elevation of about 6500 feet, and is also very free-flowering.

The species we have always known as Oreocereus, and which Kimnach now relegates to Borzicactus, are native to the eastern slopes of the Andes, growing at altitudes of about 10,000 feet. They branch from the base, are very hairy, and the flowers are small and red. The species usually seen in cultivation are B. trollii, B. celsianus, B. fossulatus, and B. hendriksenianus.

Borzicactus (Morawetzia) doelzianus is very closely related to Oreocereus, but differs in forming its cephalium on the ends of the flowering shoots. It grows on the eastern slopes of the Andes in Peru. The stems branch from the base and can reach a height of five feet. The flowers are red.

The plants formerly described as Matucanas are usually globular cacti, sometimes elongating with age and frequently offsetting. They occur at higher elevations of the Peruvian Andes (up to 13,500 feet). The popular species Borzicactus (Matucana) madisoniorum was discovered in 1963 by Paul Hutchison and is characterized by a beautiful unusually-textured epidermis, large orange-red flowers, and a body which is usually virtually spineless with maturity.

All of these plants are comparatively easy to grow, tolerating extreme winter cold because of their high-altitude origins. They are relatively pest-free, and can be watered quite generously in warm weather. Most species thrive in full sun, with the exception of B. aureispinus, which seems to prefer a filtered-light situation.

References:

Backeberg, Curt: Cactus Lexicon
Barthlott, Wilhelm: Cacti
Kimnach, Myron: A Revision of Borzicactus (Cactus and Succulent Journal, Jan. - Aug., 1960)
Martin, Chapman, Auger: Cacti and their Cultivation
Rowley, Gordon: Name that Succulent

By Dorothy Dunn
January, 1982

Succulents-of-the-Month

for 1985

January - SENECIO & OTHONNA

February - AGAVE

March - PELARGONIUM & SARCOCAULON

April - EUPHORBIA

May - PORTULACACEAE

June - picnic?

July - two speakers from the CSSA Convention?

August - DIDIEREACEAE

September - STAPELIADS (all, one, or a few genera)

October - Caudiciform Succulents

November - CRASSULA

December - Christmas Party

As of yet, each month has not yet been assigned to the various writers and/or speakers. I would like to know by the end of the December meeting who would like to contribute articles, an article, or even part of an article (for example, with the month of May, one person might write about the Anacampseros and another the rest of the succulent members of the family). Writers need not have to speak about the plants if they so wish. I would like to see some new people try their hand at this fun job (its the best way to learn about the plants and we have an excellent library to get the information from!). MANY HANDS (AND MINDS) MAKE LIGHT WORK! I would like to hear from you - call, write, or see me at the next meeting.

---Rick Latimer

SAN DIEGO CACTUS & SUCCULENT SOCIETY

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Orientation:

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.

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