BROMELIAD SOCIETY OF SAN FRANCISCO

May 2005

NEWSLETTER

Our next meeting will be held on **Thursday, May 19, 2005** at 7:30 PM
Recreation Room, San Francisco County Fair Building, 9th Avenue at Lincoln Way, Golden Gate Park, San Francisco

May Program

Mystery Program

When this newsletter was being assembled, the speaker and topic had not been pinned down. Do not worry! We will have an interesting program and a plant table of many desirable bromeliads.

May Refreshments

Brian Ransom and **Peter Wan** will provide refreshments this month.

This is *Puya pygmaea*, native to Ecuador where we visited last month during **Betty Patterson's** show. This is certainly a plant to have in one's collection as it takes up so little space. Photo is courtesy of the Florida Council of Bromeliad Societies.

April Meeting

Last month we were fortunate to have Betty Patterson visit us from Dallas, Texas. She provided a Power Point presentation of the bromeliads, native peoples, and villages of the páramos region of Ecuador. The "Sierra" or montane part of Ecuador has two major parallel ranges of the Andes Mountains, the Cordillera Occidental and Cordillera Oriental, between which is a relatively high inter-Andean plateau averaging 2650 m. Several transverse mountain chains known as "nudos" connect the cordilleras and divide the intermountain plateau into roughly 10 basins or "hoyas." The Nudo del Azuay, at 4500 m, divides the country into two sub-regions, a northern area of modern volcanism and an area of more ancient volcanism to the south. The mountains in the north are higher, wetter, and their vegetation (including the) generally resembles that of Colombia, whereas the mountains of the south are lower, drier, and their vegetation resembles that of northern Peru. The Sierra has at least 22 peaks averaging over 4200 m in elevation and 30 peaks of volcanic origin (six still active), giving rise to the designation "avenue of the volcanoes" for this region.

Betty's slides were mostly taken at very high altitudes in cold wet weather. These slides were mostly of puyas in flower, but there was one Racinaea that she was surprised to see in such a high, cold area. Most of the pictures were taken in national parks over a period of several visits to Ecuador. The puyas were beautiful and many were small enough for the collector, but it may be many years before these plants find their way into cultivation.

The San Francisco Symphony was performing the same evening as our meeting and Betty had a friend who had invited her to attend. Fortunately for us, she had to decline her friend's offer.

Researchers Find Plants Able to Fix Genetic Errors

This article is reprinted from the March 23, 2005 issue of the San Jose Mercury News newspaper.

Plants inherit secret stashes of genetic information from their long-dead ancestors and can use them to correct errors in their own genes – a startling capacity for DNA editing and self-repair wholly unanticipated by modern genetics, researchers said Tuesday. The research appears in the March 24 issue of the journal Nature.

The newly discovered phenomenon allows plants to archive copies of genes from generations ago, long assumed to be lost forever.

Then, plants can apparently retrieve selected bits of code from that archive and use them to overwrite the genes they've inherited directly.

A Most Unusual Bromeliad

D*einacanthon urbanianum* is a vicious spiny terrestrial bromeliad that only a lover of those sticky plants could love. The genus name means "terrible spine". The upper half of the leaf spines grow in one direction while the lower half of the leaf spines grow in the opposite direction. This is a monotypic genus (i.e., only one plant in the genus) and over the years it has changed from *Rhodostachys* (no longer a valid bromeliad genus) to *Deinacanthon* to *Bromelia* and finally back to *Deinacanthon*.

The plant is native to northern Argentina and Paraguay and spreads via rhizomes. When your editor was in Argentina in 2003, he saw this plant in Salta province growing under a huge *Trichocereus terschekii* cactus. It seemed to be growing by spreading on top of the ground, but some roots of the main plant were in a clay-like soil.

My plant's rhizomes have a fantastic ability to find the holes in the bottom of the pot and start growing outside the pot. These plants will also

produce more pups from the rhizomes and remain healthy even though they are not in soil.

This spring my plant flowered for the first time. The leaves flattened out to make room for about five creamy-white flowers that were very foul smelling – similar to the stapeliads from Africa whose flowers smell like spoiled meat to attract flies for pollination. There was also thick nectar surrounding the flowers. I am not aware of any other bromeliad that produces such foul smelling flowers.

The September/October 1954 Bromeliad Society Bulletin states that wild hogs and foxes eat the fruits that develop from the flowers. And the Mataco Indians of Argentina use the fibers from the plant to make baskets and nets to carry the results of their hunting and fishing. These nets or bags may be decorated with dyes. Unfortunately, the nets or bags retain the foul smell for quite a while. These nets are very tough and hold many kilograms as long as the net is dry; it easily collapses when wet.

Here is a close-up of the foul-smelling flowers of *Deinacanthon urbanianum*.

Strybing Annual Spring Plant Sale

The Strybing Spring Sale was a great success for bromeliad fanciers. Our society participated with lots of plants and lots of workers. We do not know how much money we made for Strybing, but each year our contribution seems to increase. A big thank you for all your plant donations and helping to sell plants at the sale! We passed out several of the new fliers that Dan Arcos showed us at last month's meeting.

June Plant Sale

Our combined plant sale with the San Francisco Succulent and Cactus Society will be on June 11th and 12th this year at the County Fair Building. Setup will be on Friday, June 10th from 3 PM to 8 PM. Sale schedule is

- Saturday - Setup: 8 AM to 9 AM, Sale: 9 AM to 5 PM
- Sunday - Setup: 8 AM to 9 AM, Sale: 9 AM to 4:30 PM, Clean-up: 4:30 PM to 6:30 PM

This is our only annual event that brings in money to support the society. Start setting aside your plants for the sale and save these dates to help on the sale.

Since this is such an important event for our society, we really need as much support as you can provide. You can help in three ways:

- Entering some of your premium plants in our Bromeliad display area
- Selling your own plants
- Working at the show/sale.

Remember if you plan to sell your plants, **25%** of the sales will be kept by the club. We are using the bar code system again. If you are selling plants, you must determine in advance how many bar codes you want made for each sale price (for example, 10 plants @ $5.50, 15 @ $10.00, etc.). You do not need to use all of the priced bar codes, but they **all must be made in advance of the sale** and placed on the plant or pot before the sale. You will be able to change the prices during the sale as long as you have a replacement priced bar code, so determine all prices you will need in advance. **Keith Anderson** is making up the bar codes, so you must notify him of the price and quantity of bar codes you need. **Keith really needs as much advance warning as you can provide on making the bar codes.** If you can not make our May meeting, call Keith at 650-529-1278. **One of the conditions of selling your plants is helping out at the sale for a minimum of 4 hours during Saturday or Sunday.** Let's

try not to have everyone sign up only for the last 4 hours on Sunday.

Even if you are not selling plants or entering plants in the show, we need your help. The more workers we have, the less time each of us has to put in – and we have more time to shop for some of those plants we just have to own. If you have never worked at one of these sales, it is really fun. There will be sign-up forms at the May meeting, but even if you do not sign up try to come to the sale.

Our club will be purchasing plants from some new vendors this year. **John Arden** from southern California has been hybridizing Vrieseas for many years. **Tom Koerber** was able to acquire several half-grown to mature plants that are not readily available since John has stopped hybridizing. We will also be receiving plants from two Florida nurseries in addition to the plants from Hawaii and Tillandsias from Tillandsia International.

Please **start saving your boxes and bags** for the sale. We never seem to have enough by the second day of the sale.

Survival of the Fastest

This article by John von Radowitz appeared in the 12 May Irish Examiner.

The flower of the bunchberry dogwood bursts open to shoot pollen in just under **0.5 milliseconds** - the fastest movement recorded in any plant, scientists said yesterday.

Bunchberry dogwood grows in dense carpets in the vast spruce fir forests of the northern United States and Canada. Bunchberry is a true dogwood, and in flower, foliage, and fruit it much resembles an exquisite miniature version of a flowering dogwood tree. The shiny dark green leaves of this beautiful ground cover change to red in the fall. Small, striking white flowers contrast with the dark foliage from May through June, followed by showy scarlet berries which remain on the plant until eaten by birds. In its favored environment of moist, acidic soil rich in organic matter bunchberry can spread, slowly, to form an elegant, carpet-like ground cover.

Researchers yesterday described how its petals open explosively, separating and flipping back to expose the stamens. These are the male part of the flower consisting of pollen-bearing anthers at the end of stalk-like filaments. The stamens act like tiny catapults to launch pollen to a height of 2.5cm - more than 10 times the height of the flower.

During the first 0.3 milliseconds, the stamens accelerate at up to 2,400g - about 800 times the G-force experienced by astronauts on take-off - and reach a velocity of three meters per second.

The American scientists, led by Dr Joan Edwards, from Williams College, Williamstown, took high-speed video film of the plant in action.

They wrote in the journal Nature: "Bunchberry stamens are designed like miniature medieval trebuchets - specialized catapults that maximize throwing distance by having the payload (pollen in the anther) attached to the throwing arm (filament) by a hinge or flexible strap (thin vascular strand connecting the anther to the filament tip).

"This floral trebuchet enables stamens to propel pollen upwards faster than would a simple catapult.

"After the petals open, the bent filaments unfold, releasing elastic energy. The tip of the filament follows an arc, but the rotation of the anther about the filament tip allows it to accelerate pollen upwards to its maximum vertical speed."

The rapid opening of the bunchberry is thought to enhance cross-pollination in two ways. Flower opening can be triggered by insects, which are showered with pollen that sticks to their body hairs. They may then transfer it to other flowers. Pollen from flowers that open by themselves may also be carried long distances by the wind and through intermediate ranges with drier oak forests.

IT is the fastest pollen gun in the West, or the whole world, for that matter. This is Bunchberry Dogwood (*Cornus Canadensis*).

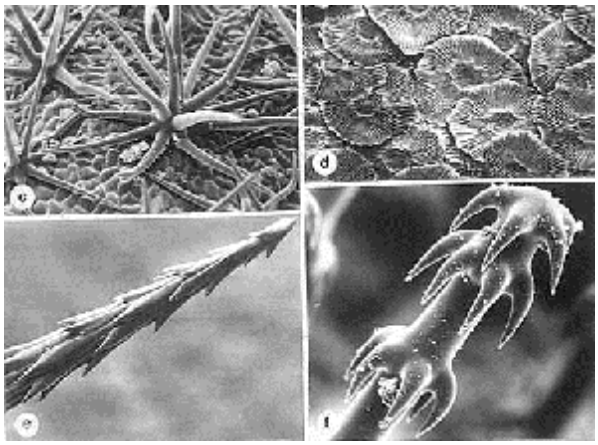
Bromeliad Trichomes

This article by Penrith Goff of the S.E. Michigan Bromeliad Society is taken from the February 2004 issue of The Bromeliadvisory, newsletter of the Bromeliad Society of South Florida.

The epidermis of many plants grows attachments consisting of one or more cells and taking many different forms. These attachments are called Trichomes (TRIH-combs), a word derived from Greek "hairy" and indeed the Trichomes we are most familiar with are the ones which give plants a downy or furry appearance. The Great Mullein, for example, or artemesia and the many other plants which grow under hot, arid conditions are covered with "hair" which protects against the glare of the sun, shelters against drying out in the wind, and helps perhaps to keep predators at bay. A more aggressive defense is mounted by the stinging nettle. Under the slightest pressure the tips of its stiff Trichomes break off, forming virtual hypodermic needles which inject the hapless intruder with its "venom." Trichomes can be utilized to help a plant climb. One of the most interesting and successful adaptations to a nutrition-starved environment is the development of Trichomes in the sundews, which exude nectar to attract insects, which are then trapped and digested.

Bromeliad Trichomes are complex cellular structures somewhat similar to an umbrella with a short shaft, the "shaft" being stalk cells, the "screen" being a disc-shaped shield. In Figure d., the Tillandsia trichome shields lie fairly flat against the epidermis so that the leaf is smooth, perhaps slightly velvety like *Tillandsia xerographica*. Not only does each bromeliad have its own unique trichomes, the trichomes on the upper (adaxial) side of the leaf are different from those on the lower side (abaxial) side of the leaf. If the shield edges turn up, the leaf surface will be rough as in *T. ionantha*. The disc may be more fully developed on one side, producing a fuzzy surface (*T. crocata*). The extreme is the hair-like extensions on the trichomes of *T. tectorum*.

The trichomes have two important functions: to protect the plant from too much sun and to acquire and conserve moisture. Tillandsias and other bromeliads which grow in a shady, humid environment have fewer trichomes than those exposed to full sun, and are green. Depending on the amount of sun exposure to which they have adapted, the density and extensions of the trichomes cause the leaves to appear gray, silver, or white. The cells of the extensions are hollow, so that they reflect light (up to 45%) and form a good insulating barrier. When the leaf is wet, the cells fill with water and reflect very little light; the leaf appears green. The trichomes channel water very quickly through the stalk cells into the leaf interior but prevent water (water vapor) from escaping. With good air circulation the trichomes quickly dry out again and the plant regains its normal gray to silver luster.



Some very different looking trichomes: (c) Rock rose (Cistus villosus) (d) unidentified Tillandsia (e) Pear cactus (Opuntia) (f) Loasa (tropical vine, passion flower family).

BROMELIAD SOCIETY OF SAN FRANCISCO (BSSF)

The BSSF is a non-profit educational organization promoting the study and cultivation of bromeliads. The BSSF meets monthly on the 3rd Thursday at 7:30 PM in the Recreation room of the San Francisco County Fair Building, 9th Avenue at Lincoln Way, Golden Gate Park, San Francisco. Meetings feature educational lectures and displays of plants. Go to the affiliate section of the BSI webpage for information about our meetings.

The BSSF publishes a monthly newsletter that comes with the membership. Annual dues are single ($15), dual ($20). To join the BSSF, mail your name(s), address, telephone number, and check made payable to the BSSF to: Harold Charns, BSSF Treasurer, 255 States Street, San Francisco, CA 94114-1405.

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BROMELIAD SOCIETY INTERNATIONAL

The Journal is published bimonthly at Orlando, Florida by the Bromeliad Society International. Subscription price (in U.S. $) is included in the 12-month membership dues: single ($28.), dual (2 members at one address receiving one Journal -$30). Address all membership and subscription correspondence to: Membership Secretary John Atlee, 1608 Cardenas Drive NE, Albuquerque, NM 87110-6628

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