

BROMELIAD SOCIETY OF SAN FRANCISCO



FEBRUARY 2012

NEWSLETTER

Our next meeting will be held on **Thursday, February 16, 2012** at 7:30 PM
Recreation Room, San Francisco County Fair Building, 9th Avenue at Lincoln Way, Golden Gate Park, San Francisco

February Program

Bromeliad Basics in One Hour

This month we will have a four part discussion on bromeliad basics led by our members:

1. What is a Bromeliad? Dan Arcos
2. How to Divide and Pot Bromeliads - David Feix
3. How to Mount and Hang Tillys – Peter Wan
4. How to Hybridize and Raise Broms from Seed – Wes Schilling

This will be a meeting useful for beginners and advanced discussion and sharing by all is encouraged.

February Refreshments

No one has signed up for refreshments this month.

Pacific Orchid Exhibition

As we mentioned in last month's newsletter, our society will be selling plants at this year's Pacific Orchid Exhibition that takes place from 23 February through 26 February. **We need help in staffing the sales tables over a period of several days.** Our sale booth is very small and will not accommodate more than 2 people comfortably. Carl Carter is coordinating the staffing so please contact Carl to help fill in where needed.

carlcarter@ekit.com
510-318-2379

The days and times for the sale are

Thurs, February 23 (Gala Benefit) - 6:30pm - 10:00pm
Fri, February 24 - 10am - 6pm
Sat, February 25 - 9am - 6pm
Sun, February 26 - 10am - 5pm

In addition to working at the sale, we need SMALL BOXES for the customers' plants. We can collect boxes at this month's meeting or bring them with you to the sale.

January Meeting

Peter Wan provided a superb show of his trip to Ecuador last month – except he just gave us an introduction to the trip. This show was part one of two or three shows. In addition to the superb photography, Peter brought in some humor with shots such as the iguana with a pigeon on its back in a Guayaquil Park. We are looking forward to his next presentation with many new and colorful bromeliads.

Dues are Due

A new year has begun and dues are due: \$15 for a single membership and \$20 for a family. Pay Harold at the meeting or mail to Harold. See back page for details.

The Old, the New, and the Odd

This article by Larry Giroux is reprinted from the November 1995 newsletter of the Caloosahatchee Bromeliad Society.

Most tillandsias are “atmospheric types”, which means they live in epiphytic habitats too dry to allow water capture. They lack the overlapping expanded leaf bases, but they possess specialized tillandsioid trichomes on their multiple small leaves which provide for better airborne water and mineral absorption. *Tillandsia multicaulis* is unique among tillandsias in several ways. Although its seedling state resembles most other tillandsias, there is a fast transition from the typical juvenile tillandsioid leaf structure to that of a “tank type” form. An evolutionary theory concerning the development of Tillandsioideae called *Neoteny* is characterized by the retention and/or elaboration of primitive juvenile features in the adult stage. This would suggest that most tillandsias are specialized and are more “modern”, while *T. multicaulis* along with the Guzmanias and Vrieseas are more primitive on the evolutionary chart.

Another unusual characteristic of *T. multicaulis* is that it is one of the two tillandsias (the other is *T.*

complanata) with several inflorescences emerging from the leaf axis. The result is a spectacular sight at blooming time with the red bracts and blue flower petals of the multiple 2” by 4” paddle shaped inflorescences forming an impressive bouquet.



This photo of *Tillandsia multicaulis* by A. Staelens is courtesy of the Florida Council of Bromeliad Societies.



This photo of *Tillandsia complanata* by Carol Johnson is courtesy of the Florida Council of Bromeliad Societies.

Bromeliads and the Mighty Amazon Basin

This article by Len Butt is reprinted from the August 2001 newsletter of the Caloosahatchee Bromeliad Society. Len Butt, now deceased, was one of the founders of the Australian Bromeliad Society.

It is almost impossible to imagine the vast quantities of wild territory that houses our bromeliads when they are in their native habitat! The magnificent Amazon River which winds across the country, nearly splitting it in twain, is the great beating heart of that very tropical paradise of plants and rainforest.

Rising as a small stream some 17,000 feet above seal level, in the snow-capped Peruvian Andes, it tumbles and plunges down ravines and chasms onward through a great green jungle basin and finally enters the Atlantic Ocean. It is 200 miles wide at the mouth and laced with many islands. The journey of this river being 4,000 miles, and it is said that the ocean going liners can navigate some 2,300 miles inland.

The jungle surrounding the great green basin is unique in the world's geography. Wet, dripping, dimly lit, the area is unmarked by seasons and has relatively no disturbance or changes in over one million years. Now, we know by reading our newspapers, man, the primary destroyer, is trying to change it!

The epiphytes, be they orchids, aroids, or bromeliads which live in this vast ecological system have developed their own water supplies and have come to terms with their own mini-world of life.

Other great forests of our Northern and Southern hemispheres have experienced Ice Ages and therefore are only young in comparison, so like parts of our Tropical Australian Rainforest, here is an ancient primeval area where one can look into the past.

Apparently, this great rainforest and its almost limitless canopy is unbelievably rich in fauna and flora and yet to quote some few of the naturalists who have wandered there, it is the most hygienically clean walkway ever. Everything that crashes down, be it a tree or an animal, is consumed by denizens of the area in a very short period. Trees are ant or borer ridden and become dust in a short time and fungi also help this. Excrement from man and animal vanish overnight back into the forest floor. Animals and the burial dead of man are picked to clean bones in short order.

Bromeliads flourish as epiphytes on a huge quantity of the jungle trees, never really reaching the top story section of the tree, but growing on

lianas, buttresses, in tree crotches, out of stump holes and among rocks on the jungle floor. The Neoregelia, Billbergia, and Aechmea genera are scattered through many parts of Brazil. The shoreline of the great river's many streams, inlets, and rocky terrains is very rich in Bromeliaceae.

Bromeliads not only are a cache for water, but often many forms of small animals and insects live in these reservoirs. Some forms harbor mosquito larvae as well as crabs, swimming beetles, little lizards, and even brilliantly painted tree frogs. These latter are known as poison frogs, having deadly toxins in their skin glands.

Vampires, Tillandsias – Things that Go Suck in the Night

This article by Andrew Flower, former editor of the BSI Journal, is reprinted from the January 2002 newsletter of the North County Bromeliad Society.

One school of thought suggests that it does no harm to water Tillandsias at night. This gives them many hours to absorb the water before the demands of the hot sunny days begin.

Ostensibly, this "suggestion" is contrary to the oft-quoted advice to water Tillandsias in the early morning, or late afternoon provided they are dry by nightfall. So I think it is worthwhile commenting on this a bit further, since taken at face value such contrary advice can be confusing. As it happens, both pieces of advice are correct in particular circumstances.

The question of watering xeric Tillandsias involves considering two of the primary requirements of plant life: carbon dioxide and water. The CAM (Crassulacean Acid Metabolism) business relates to the different way Tillandsias (and some other plants) actively take up carbon dioxide. A "standard" plant model, like most of your terrestrial types, takes in carbon dioxide through its leaves during the daylight and uses energy from sunlight to convert the carbon dioxide into a solid form of stored energy – mainly starches. The huge problem with this process is the fact that as soon as a plant opens up the pores (stomata) in its leaves to pull in carbon dioxide from the air, during the day, water vapour rushes out through the pores. This is bad news if you are a little Tillandsia sitting on a twig with no way to replenish the lost water through your roots, and on a hot day you would lose so much

moisture you would just burn up and die. So, “air” Tillandsias were only able to evolve because of a different carbon dioxide-absorbing system, namely “CAM” respiration. The CAM plants do not take up carbon dioxide during the day; they wait until night. At night they lose FAR less moisture when they open their stomata because the ability of the air to suck moisture out is much less (this is a function of the lower temperature and higher humidity – expressed as “VPD” or the vapour pressure deficit of the air – which I won’t go into here (sighs of relief!))

So think of your Tillandsia as a little night vampire, sitting there sucking carbon dioxide out of the night air. Throwing water on it at night has a similar effect as throwing sunlight on old Dracula. Because when the water-absorbing scales on the Tillandsia’s leaves get wet, they flatten down and cover their stomata and the little chap is effectively suffocated.

Some people have heard (or even read) that bromeliads cannot stay wet for more than 24 hours. I think the real point is that Tillandsias cannot stay wet for 24 hours a day on a continuing basis, ad-infinitum. Why not? Because they die of carbon dioxide starvation, for one thing. I have an airtight plastic box into which I put Tillandsias and measure the carbon dioxide content of the air with an analyzer. When you put dry CAM Tillandsias in the box, the carbon dioxide content of the air decreases during the night, as you would expect from the theory that they are absorbing carbon dioxide during the night. And during the day, the carbon dioxide content of the air in the container INCREASES which you may not expect. What this indicates to me is that the Tillandsia is continually LOSING carbon dioxide, day and night, at a small rate (consistent from what you would expect from osmosis as the concentration of carbon dioxide inside the plant’s cells is greater than it is in the atmosphere). So, the Tillandsia as a living form is continually “leaking” carbon dioxide, but during the night while it is actively taking up carbon dioxide, considerably more carbon dioxide comes in than goes out. In one experiment I soaked a number of Tillandsias in water for a couple of hours so they were well saturated; then put them in the plastic airtight box. During the night, the carbon dioxide content of the air INCREASED; during the day the carbon dioxide content in the air again increased, and so on for several days. So apparently the plants were just losing carbon dioxide continuously and if left in this state they would presumably reach a point when the carbon dioxide concentration inside the plant cells was

the same as the concentration in the air – not enough to sustain the plant.

Getting back to cultivation. The standard advice I give is to water your Tillandsias in the early morning, allowing them a couple of hours at least to absorb water before the air temperatures start rising and drying the plants. This avoids the problems you will get if the plants are wet during the night when there are lower temperatures and higher humidity, hence little drying effect. There are going to be times when you have hott night temperatures and lower relative humidity (hence higher VPD) and then you can water the plants at night knowing they will have some time to stay wet, but there is still sufficient drying capacity in the air to get them dry,

This story also tends to accommodate the situation others observed in nature where xeric Tillandsias receive water from a night mist that apparently comes down mid-way through the night. This early-morning wetting is going to still leave a period during the night hours when the plants are dry, thereby able to entrap carbon dioxide.

Cruenta or Johannis?

This article is reprinted from the September 1996 newsletter of the Bromeliad Society of South Florida.

We are all familiar with *Neoregelia cruenta*, right? We have it in our collections, out in the yard soaking up the sun. Now I don’t want anyone to get upset, but you may have to change the labels on some of those cruentas Note I said “may.”

For sometime, rumors have been circulating that the well known *Neoregelia cruenta* (in its many forms) may actually be the lesser known *Neoregelia johannis*. Brazilian growers have been hinting that we in Florida have got it all wrong. But how do you know which is which? Derek Butcher, a grower in Australia who has been “butchering” neoregelia flowers for thirty years in an effort to straighten out the genus, made the identification seem simple at a seminar in Orlando. If the plant has floppy spreading leaves and white flowers, it’s probably *N. johannis*. If it is more upright and vase shaped with blue flowers, it could be *N. cruenta*. Note again the “probably” and “could”. I refuse to be pinned down on this one more specifically.

And why should you care? Because you're going to hear references to both these plants, and before you jump to the conclusion that there's another species you don't have, consider that it may be in your collection after all, under another name. One day the taxonomists may straighten it all out scientifically, but in the meantime you're ahead of the game because of this tip-off.

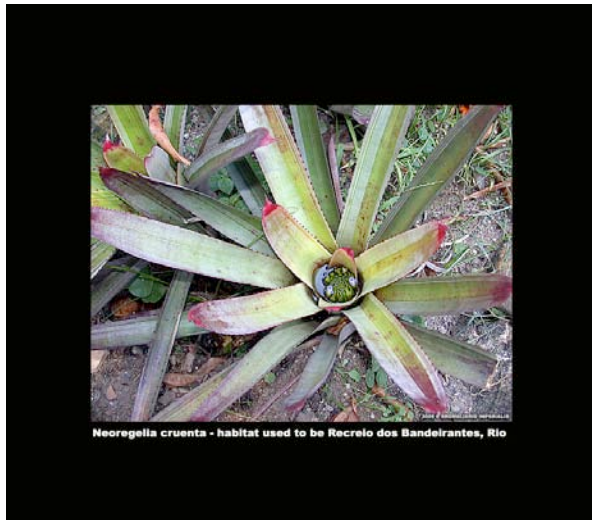
Regardless of the name, this neo is an essential part of the South Florida landscape. Confused? Contact Uncle Derek in Australia; he'd like to hear from you.



Neoregelia johannis
15th World Bromeliad Conference, St. Petersburg, Florida, May 13 - 19, 2002

Shown by
Dave Johnston

Photo of *Neoregelia johannis* is by Michael Andreas and is courtesy of the Florida Council of Bromeliad Societies.



Neoregelia cruenta - habitat used to be Recreio dos Bandeirantes, Rio

This photo of *Neoregelia cruenta* by Bromeliario Imperialis is courtesy of the Florida Council of Bromeliad Societies.



Photo of *Neoregelia cruenta* (rubra form) is by Michael Andreas and is courtesy of the Florida Council of Bromeliad Societies.

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, e-mail address, and check made payable to the BSSF to:

Harold Charms, BSSF Treasurer, 255 States Street, San Francisco, CA 94114-1405.

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OF
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This month we will do bromeliad basics for beginner and advanced!