BROMELIAD SOCIETY OF SAN FRANCISCO

FEBRUARY 2016

Meeting Specifics

When: Thursday, February 18

Time: 07:30 PM

Where: Recreation Room
San Francisco County Fair Building
9th Avenue at Lincoln Way
San Francisco

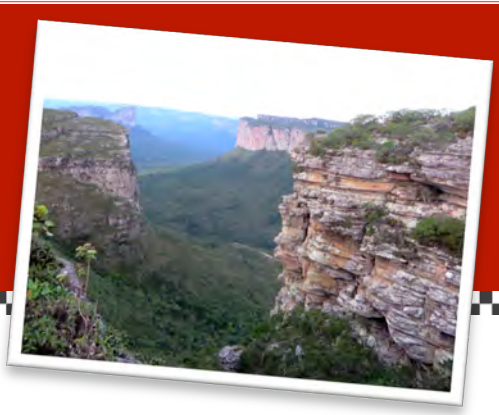
Columbia Bromeliads

This month, **Kelly Griffin** will be visiting us again from the San Diego area. For those of you who do not know Kelly, he is the manager of Succulent Plant Development for Altman Plants, the largest producer of succulents in the country. His inclination has been towards Agaves, Aloes, and Echeverias, but his interests extend to almost all plants. In his job he has been able to travel all over the world documenting plants and collecting seeds for propagation – some have even been finding their way into our gardens. He also has hybridized many aloes and agaves that are collected by many hobbyists.

This month, Kelly will speak to us on his recent trip to Columbia where he hiked to see agaves, zamias, orchids, and bromeliads. We do not have many shows that cover plants found in Columbia so this is a meeting that you do not want to miss.

Andy also will be bringing plants for sale.

No one signed up for refreshments this month.



January Meeting

Last month, Andy Siekkinen took us on a trip to the state of Bahia, Brazil

Andy Siekkinen's slide show covered his exploration of bromeliads in Bahia, Brazil. Most of these plants are found in Chapada Diamantina that is a large national park. This part of Brazil has been experiencing drought conditions similar to us in California, so all the plants were stressed. Even so, Andy discovered many happy bromeliads. One of the points that he made during his presentation is how variable the plants are in a single population. The plants vary in size, color, and spines, but are the same species.

Among the more interesting plants he saw were the type of Orthophytum species that color up in the center when coming into flower to attract pollinators (similar to Neoregelias). Andy thinks this type of Orthophytum may be elevated to a new genus.

Andy also saw lots of Hohenbergias and he fell in love with them. He said this is a genus he would consider specializing in if he were not already studying the Hechtia genus. Some of the more common bromeliads he included in his show were *Aechmea bromelifolia* and many different Neoregelia species.

Andy showed us some Cottendorfia plants that have both male and female flowers.

Dues are Due

A new year has begun and dues for our society are due: $15 for a single membership and $20 for a dual membership. Pay our treasurer, Harold Charns at the meeting or mail to Harold. See back page of newsletter for details.

Pacific Orchid Exposition

Our vendor participation at the POE this year will from 26-28 February. This is one of our two annual sales and we need your participation to make it a success**. We are still short of helpers for Sunday, 28 February**. Contact Dan Arcos at 415-823-9661 if you can help.

Cryptanthus warasii

Cryptanthus warasii is a semi-succulent xerophytic bromeliad that greatly appeals to both succulent and bromeliad collectors as soon as they see it. On August 25, 1977, Eddie Waras discovered *C. warasii* at Diamantina, Minas Gerais, Brazil. The holotype is maintained at the herbarium Bradeanum in Rio de Janerio. Brazil is the sole source of all cryptanthus species often called “earth stars”.

Most cryptanthus species are mesophytes inhabiting grasslands and forests, but C. warasii grows in the open, colonizing humus-deficient cracks in cliffs. The 20 to 30 leaves, which make up its small rosette are linear-triangular, from 2 to 6 cm long, 1 to 2 cm wide, and so densely covered with white scales that they appear to be felted. They are broadly concave on top and keeled on the underside, acting like a backbone to give rigidity. Marginal spines approximately 2 mm long, are almost straight. The original description states that the spines go toward the leaf base, but in my experience this is true only of the basal portion of the leaf, while from the middle of the leaf the spines begin to hook towards the apex. The scaly coating on the leaves has distinct and beautiful spine impressions on both the top and the bottom that look a bit like zippers.

The inflorescence is nestled in the center of the rosette. It consists of about 20 flowers arranged in fascicles of 2 or 3. Spineless floral bracts about 11 mm long, glabrous above and scaly below equal the length of the sepals. The petals are white to off-white, slightly longer than the sepals, and recurved at anthesis. Stamens are exserted at anthesis.

Before flowering, the rosette is upright and flaring. The leaves gradually recurved until after flowering, the plant flattens out and produces a few pups on stolons. As with other terminal flowering bromeliads, the parent plant dies and the offspring begin a new cycle. When not in flower, it could be difficult to guess that *C. warasii* is indeed a cryptanthus and belongs to the subfamily Bromelioideae instead of the Pitcairnioideae, as do the Puyas, Dyckias, Hechtias and most other terrestrial xerophytic bromeliads. Since this plant is rarely seen in collections there is little chance to become familiar with it except by studying plants in the Huntington Botanical Garden Conservatory or in other botanical gardens.

This bromeliad has an undeserved reputation for being difficult to grow. It apparently does not do well if kept in 6-inch pots of humusy soil in the humid, warm greenhouse conditions so favored by mesophytic cryptanthus species. Instead, C. warasii thrives with warm sunny days, cool nights, and plenty of air circulation, in a 4 or 5 inch pot filled with cactus-type soil mixed with about 50 % pumice or perlite. Frequent spring and summer fertilization with a dilute solution of a balanced fertilizer produces a plant that does credit to the grower.

[This article about a very unusual plant is by the late Dorothy Buyer. It is reprinted from the January 2013 Pup Talk (newsletter of the Saddleback Bromeliad Society). It originally appeared in the November-0December 1996 Cactus and Succulent Journal. Dorothy was a master grower of terrestrial bromeliads as well as cacti and succulents.]

Vampires, Tillandsia – Things that go suck in the night

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 typesa, 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 vapor 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 vapor 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 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 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 might 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 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 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 hot 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 midway 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.

[This article by Andrew Flower, former BSI Journal editor, is originally from the January 2002 newsletter of the North county Bromeliad Society.]

Vriesea rauhii

This northern Peruvian native is easily confused for a tillandsia. Rauh, who collected the original type specimen in 1956, says, “Only the scales at the base of the petals indicate its position in the genus Vriesea.” The plant is found on arid hillsides, dry streams, or in canyons at about 2,300 feet altitude. In nature, this epiphytic plant often receives more liquid from fog than from rain.

This mid-sized bromeliad has slender unarmed leaves of 12 to 15 inches on an adult plant. The gray-scaled leaves give a deceptively soft appearance.

The approximately one foot long compound inflorescence features several thin, open, erect spikes. The bracts are described as purple, red, or maroon. The long, thin flowers are a deep violet blue.

In cultivation, this plant adapts to a variety of conditions. It prefers a bright, sunny location and, because it comes from an arid area, your watering might be limited.

[Article is reprinted from Pup Talk, the January 2013 newsletter of the Saddleback Valley Bromeliad Society]

Vriesea rauhii

Tillandsia erecta

Tillandsia duratii

Tillandsia atroviridipetala

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 sfbromeliad.org 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 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 Bromeliad Society International publishes the Journal bimonthly at Orlando, Florida. Subscription price (in U.S. $) is included in the 12-month membership dues. Please address all membership and subscription correspondence to Membership Secretary Annette Dominquez, 8117 Shenandoah Dr., Austin, TX 78753-5734, U.S.A. or go to www.bsi.org.

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