

BROMELIAD SOCIETY OF SAN FRANCISCO



December 2009

NEWSLETTER

Our next meeting will be held on **Thursday, December 17, 2009** at 7:00 PM
Recreation Room, San Francisco County Fair Building, 9th Avenue at Lincoln Way, Golden Gate Park,
San Francisco

December Program

Holiday Potluck and Gift Exchange

This month culminates another year for our society. Our membership grew this year, probably as a result of our great web site constructed and maintained by **Dan Arcos** and our bromeliad sales (we had two sales this year). There are many of our members that are not able to get to our monthly meetings. We hope that many of you will be able to join us for the holiday potluck.

Note that our meeting time this month is 7 PM instead of 7:30 PM.

This month's meeting will be an opportunity for us socialize and partake of great food. The society is providing a turkey and honey baked ham. We are asking you to bring a dish to share with the group – drinks, vegetable dish, rolls, desserts, etc. Please try to remember to bring serving silverware for the dish that you bring. We will provide plates, cups, silverware, and napkins. **Marilyn Moyer** is coordinating the food items. Marilyn has tried to contact each of you by phone or e-mail. If she missed you, please call **Marilyn (650-365-5560)** to see where you can fill in some of our gaps.

Our club will provide a plant for each member. You may also bring a special plant or plant-related item for exchange with the other members (not required).



2009 Programs

We enjoyed a wide variety of programs this year and gained several new members into the world of bromeliads. Thanks to **Bruce McCoy** for getting publicity about our society for each of our sales this year and arranging for an exceptional group of quality speakers. A thank you is given to all the people who participated in our two sales this year; these sales are our only money-making opportunity that enables us to obtain great speakers and great plant tables. Finally, we wish to thank the people who planned our garden tours and hosts for the garden tours in San Francisco this year. Here are some highlights of our activities this year.

January

Peder **Samuelsen** regaled us with a series of photos, videos, and music on his tour of the 2006 World Bromeliad Conference in San Diego. We visited the show rooms, the top awards, the sales area, bromeliad nurseries in the area, collections of two San Diego members, plants in the San Diego Zoo, members of our society discussing their plant purchases, and a video of the plant collection of Kay and Joe Quijada. Peder zipped through these adventures rapidly – unfortunately, there was a pest in the show who kept saying WOW!

February

Roger **Lane** provided us with a survey of the Nidularium genus. Since Elton Leme has revised this genus as part of his revision of the complete Nidularioid Complex of bromeliads found in the Atlantic Forest of Brazil, slides of the Canistropsis genus were also included. Since there were several questions about Canistropsis, Roger explained why this genus was created in a subsequent newsletter.

March

In March, **Brian Kemble** provided an excellent slide show on the terrestrial bromeliads. Brian has been the Director of Horticulture at the Ruth Bancroft Garden since 1980. There are so many terrestrial bromeliads that no slide show can be complete, but Brian exceeded our expectations with his comprehensive coverage. Although there was an emphasis on the Dyckias, Hechtias, and Puyas, there were also slides on Orthophytums and Cryptanthus. Some of the Puya flowers were outstanding and very unusual – slides that Brian had obtained from private collections in southern California.

April

Guillermo **Rivera** provided an excellent slide show on a trip he has organized to see the bromeliads and cacti of Peru. Guillermo has visited our society several times to show us the types of plant trips he has organized that emphasize bromeliads and cacti. At the time that we saw the show, Dennis Cathcart who has made many trips to Peru and had seen these slides did not recognize some of the plants, so we thought that Guillermo might have discovered some new bromeliads. Since then, Harry Luther has identified most if not all of these plants.

May

Peter Wan provided a fast-paced show on the many bromeliads he and **Bruce McCoy** found on their trip to Honduras. Bruce and Peter had the expertise of a local guide who was able to optimize the time and plant material they got to see. Their guide has discovered some new bromeliads including *Tillandsia hondurensis*.

June

In June, **Bruce McCoy** gave a slide show on his 2005 visit with **Peter Wan** to Costa Rica. Since you editor was visiting Brazil, he had to miss the meeting and has no summary for this meeting.

July

Our July program included a slide show of the unique and interesting plants that **Kelly Griffin** encountered on a cross country trip through Mexico. Kelly Griffin is the curator of Xerophytic Plants at Rancho Soledad Nurseries in Rancho Santa Fe, CA. The nursery grows a great assortment of beautiful and unusual plants for the home and landscape. He spent an amazing three weeks searching the hills and country side studying the flora and found interesting Hechtias, Tillandsias, Echeverias, Agaves and of course loads of other assorted succulent plants! Kelly was mobbed when he brought out the plants that he brought for sale that included seedlings of bromeliads he has grown as well as some of his own Aloe hybrids. Your editor bought a Pitcairnia from Peru and a Hechtia from Mexico.

August

In August, we held our annual garden tour and visited four spectacular gardens and greenhouses in San Francisco. Since this event took place on Sunday, some of our members who are not able to attend the monthly meetings are able to visit wonderful gardens and socialize with the group. This year we had members of the San Francisco Succulent and Cactus Society join us.

Pests of Spanish Moss

The BSSF thanks the garden owners for opening their inspiring gardens to BSSF for this year's tour: **Ted Kipping, Jack Halpern, Stacey Michaels, Harold Charms** and **Rose Schubert**. Thanks also to all who contributed to the potluck and a giant thanks to **Dan Arcos** for organizing this year's successful garden tour and potluck.

September

Dr. Terrie Bert from Florida gave us a PowerPoint presentation that covered the development of bromeliad genera from the earliest bromeliads to present day, the dispersal of bromeliads throughout warm regions of the Western Hemisphere, and their adaptation to differing climates. Elements employed in the talk were bromeliad shape and form (morphology), genetics, distribution, ecology, and Western Hemisphere climatic and geographic history.

As most of you know the *Brochinia* genus found in Venezuela is probably the earliest of the bromeliads. What was surprising in Terrie's talk is that the *Hechtia* genus is also very old and these plants are only found in the United States and Central America. There are many mysteries yet to be solved in developing a complete story of the bromeliad origins. Terrie also brought many plants for sale that we do not grow in the San Francisco area.

October

Tom Vincze presented a photo tour of growers in Southern California he visited during the 2006 World Bromeliad Conference in San Diego. Since your editor was able to attend this meeting, I can not provide any more information on the meeting.

November

Last month our president **Carl Carter** gave a slide show based on a trip to Brazil that he and some of our society members made in June/July this year. Guillermo Rivera was our guide and he also had a bromeliad botanist on the trip to help in identifying the plants. During our trip we discovered 3-4 new bromeliad species (based on Elton Leme inspecting the collected material). Carl covered territory on this trip that no one else did – he usually was the first one off the bus at each stop and often the last one to return to the bus. Although Carl never got the slide show to operate normally, we still got to see some fantastic shots of a fun trip.

This article by Jerry Krulik is reprinted from the March 2008 issue of *Pup Talk*, newsletter of the Saddleback Valley Bromeliad Society.

Tillandsia usneoides, or Spanish Moss, is a strange bromeliad. No other bromeliad grows in loose hanging clusters of tiny stems, up to 25 feet long. There are 30 species in the *tillandsia* subgenus grouping called *Dianphoranthema*, of which *T. usneoides* is a member. None of the others form hanging chains, so *T. usneoides* is unique (1)

No other bromeliad has such a huge natural distribution, from southern Virginia to Argentina. No other bromeliad occurs naturally so far north into the temperate zone. It has even been given its own generic name, with only the single species in it. This was *Dendropogon usneoides*. "Dendropogon" means tree beard in Greek. "Usneoides" means like *Usnea*, a wispy type of lichen found on plants in high humidity areas. There are more than 600 species of *Usnea* at present, many of which look a lot like Spanish Moss.

Various web sites quote the flower color of Spanish Moss as being green, yellow, yellow-green, or blue. I have never seen a blue flower. According to one web site, blue and red flowers are hoaxes. Bright yellow flowers do exist, from at least one Peruvian population. (3)



This is *Usnea australis*, one of the many lichens which *Tillandsia usneoides* resembles.

One somewhat odd feature of Spanish Moss is that it appears, at least in cultivation in California, to have no pests of any kind. It grows quickly and easily, needing only sufficient water. I have never heard of anyone complaining of anything attacking it. Perhaps, though, this is due to the fact that southern California is not in its natural area of distribution. Many plants, like *Eucalyptus* and *Oleander*, thrive here like weeds; at least until recent times when introduced pests like the

Eucalyptus stem borer and lerp psyllid have devastated the groves. Likewise the Oleander has greatly decreased in abundance, after a leafhopper and a fatal yellowing virus were apparently introduced from Florida. So perhaps we are just lucky, so far.

I did a series of internet searches and found a number of interesting things to share. For example, several websites mentioned that a mold had attacked Spanish Moss in the 1970's in the southeast United States. This greatly decreased the *Tillandsia* population. Later the mold problem disappeared and the Spanish Moss recovered. I could not find any scientific identification of this mold, (4) and no more recent reports of this problem. I also did not find any mention of mold attack on other native *tillandsias*.

Next I thought about scale insects. These are some of the tiniest bugs, and would seem to be right at home on the thin stems of Spanish Moss. The web sites I searched led me to see that there are over five thousand name species of scales. I did locate one which sounded promising: *Epidiaspis tillandsiae*. This pest was described in 1972, but I don't know if it occurs on Spanish Moss. No other information seems to be available. One problem with scales is that they can be pretty hard to locate unless there is a major infestation. Several web references gave lists of invertebrates found in Spanish Moss. The normal way to find these is to knock off all bugs into a container, or to poison the plant first and then knock off the dead bugs for counting. Scale insects cannot be located that way since they will not release from the plant even when dead, so would not be likely to be found unless many stems were checked under a hand lens.

Their bigger scale insect cousins are called mealies or mealy bugs. I was surprised that the only reference to a mealy bug infestation of Spanish Moss, was at a German botanical garden in Dresden. *Orthezia tillandsiae* is actually a soft scale, a close relative of the mealies. It looks like a mealy bug due to wax plates and egg sacs on its body. The only other reference to these bugs as pests, says that they are small tubular insects that lie along the stem. That would mean that the oval white mass is an egg mass at one end of the mealy bug, which looks like a long piece of leaf.

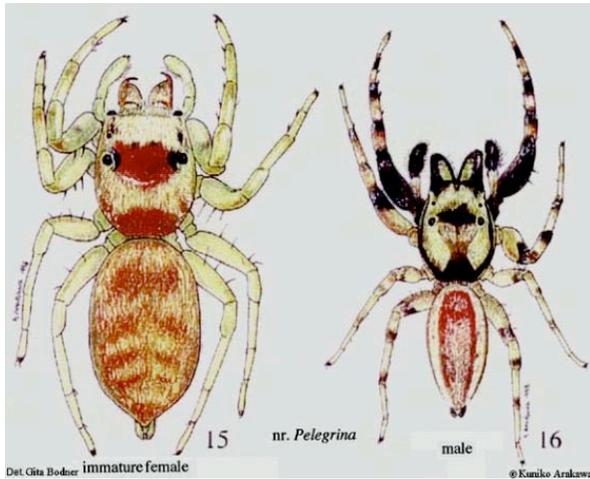
Several people have studied the invertebrate fauna of Spanish Moss. No particular associations turned up, except for two non-insect species. Several people mentioned 'red bugs' or chiggers. These are not an insect but a type of mite, related to spiders. They quite seriously said that the best way to get rid of red bugs is to put the Spanish Moss into a microwave, and cook it for a very short time! They said that if the time was short, the plant was unharmed and the chiggers were

killed. Since chiggers only feed on skin cells, and chiggers are common on many types of vegetation in the right season, their association with Spanish Moss would not appear to be significant. Here are two red chiggers, or red bugs. (7)



I also assume that some type of spider mite can be found on Spanish Moss, though again I did not find any specific references. I have plenty of spider mite around my house and yard, but have never seen any of their telltale webbing on the Spanish Moss.

Let's talk about spiders now. Recent work in South America has shown that many types of spiders are only found on certain bromeliads. In some cases, fieldwork has shown that the plants benefit from being fertilized by the waste products of the spiders. It now appears that there is an earlier association known of spiders and Spanish Moss. One species of spider, *Pelegrina tillandsiae* Kaston, 1973, has only been found in Spanish Moss. (8) It is a jumping spider, just like most of the bromeliad-specific South American spiders. Too bad no one has done any work to study this spider and its association. It is so little studied that no photo of this species appears on the web. Here is a related species from Costa Rica. (9) Note that this photo shows both male and female spider. Many jumping spiders have males and females that are quite different in appearance.



I found one final pest of *T. usneoides*. I have occasionally seen, in California, an unusual bug. It is colorful, and looks like a medium-sized fly of some strange type. It turns out that it is actually a day flying moth. There are many species, so the one I think I have seen in California is probably not associated with bromeliads. However, there is one species in the SE United States which has recently been found to eat Spanish Moss.

The adult moth is very colorful, like many lichen moths. The soft body is orange or sometimes yellow, with metallic blue triangles at its waist. The long swept-back wings look very like the double wings of some flies, shiny black with two small orange splotches. The thorax is blue-black, but the head is orange, with thick black antennae. This picture of the colorful adult is from the bug guide web site. This is a member of the Tiger and Lichen Moth Family, members of which commonly eat lichens as larvae. I venture to propose, that the ancestor of this moth fed on *Usnea* lichens, and then got confused and tried Spanish Moss by mistake. This is one pest which I wouldn't mind sharing my Spanish Moss with. I have never seen this moth, or Spanish Moss, mentioned in any gardening books about setting up a butterfly garden. This led me to a dedicated moth photo web site, where I was astounded by the many colorful species, some looking just like wasps and bees. (12)The distribution map for *D. atripennis* only shows it to be occurring from Florida to Texas, so I must have seen its relatives here in California. (13)

That is all I could find on Spanish Moss pests. Note that most information I found is related to the US population. I suspect that many more pests of *T. usneoides* will be identified as ecologists study the extremely widespread populations, especially in Central and South America.



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6. <http://bromeliadbiota.ifas.ufl.edu/scalehodes.htm>
7. http://claremajor.net/archives/2006_06.html
8. <http://salticidae.org/salticid/diagnost/pelegrin/tillandsia.htm>
9. <http://www.miiz.waw.pl/salticid/diagnost/pelegrin/sp-olson.htm>
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12. <http://mothphotographersgroup.msstate.edu/Files/Live/Living42F.shtml#8266>
13. <http://www.butterfliesandmoths.org/species?l=3851>

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:

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BROMELIAD SOCIETY INTERNATIONAL

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BROMELIAD SOCIETY
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Let's have a huge turnout for our holiday meeting!
