

The Florida East Coast Bromeliad Society

Next meeting Sunday, October 9th, 2016 1:30pm.
Colony in the Wood – club house
4000 S. Clyde Morris Blvd., Port Orange 32129

October, 2016

Hummingbirds!

President – Bill Hazard 386/882-3850
Vice President – Rick Ryals 386/679-8700
Secretary – Calandra Thurrott 386/761-4804
Treasurer – Eve Krauth 386/871-1041

This Month's meeting

I'm always puzzled that more people aren't interested in bromeliads. First of all, they're incredibly easy to grow. The foliage often is quite beautiful in its own right. The inflorescences are long lasting and certainly eye-catching, but on top of that, the colorful tubular flowers often attract hummingbirds!



Reinier Munguia

This month we will have an opportunity to learn more about "Beautiful and Fascinating Hummingbirds" from Reinier Munguia, the president of the Lake Region Audubon Society. This is sure to be a very interesting meeting, so be sure to mark it on your calendars! The following is from an article by Reinier regarding Florida's sandhill cranes:

Reinier Munguia is a full-time naturalist and nature photographer based in Lakeland, Florida. He serves as the President of the Lake Region Audubon Society and Eagle-Watch Volunteer Coordinator. His work has appeared in various publications including books, magazines and scientific publications.

He spends great amount of time documenting wildlife and their struggles in their constant changing environment.



Photo from gbasco artflakes

Last month's meeting

I don't know how he does it, but every time Francisco Cardoso produces one of his 4 star dining extravaganzas for our group, he outdoes the last one!



I don't think I've ever seen such a large pot of spaghetti sauce before and the cannolis ...to die for!



Once again Hedy Quirk came up with some truly memorable decorations for the occasion. Somehow she transformed the meeting space into an intimate Italian trattoria, complete with red and white checkered table cloths, Italian flags and, of course, a center piece for each table including a chianti bottle holding a melting candle! Thank you Hedy!

I also want to thank Marty Folk for not only donating plants for the silent auction, but also pledging to match whatever amount came in from the sale of his plants (and, of course they were terrific plants – I managed to outbid some others for a very nice Aechmea).

We just can't thank you enough Francisco, and thank you Rick for providing most of the beautiful raffle and silent auction plants and for coming up with such a great idea!

Finally, thank you everyone for being so generous in your donations to the BSI66 Fund Raiser! I think it's pretty clear that FECBS has now set the bar for bromeliad societies everywhere for this project and with similar support from the other societies BSI will soon meet its goal of raising \$25,000 over a one year period!

President's message –



A week ago I decided to heed Jay's advice regarding the timing of splitting and repotting Neoregelias. To refresh your memory (and for those unable to attend September's meeting) Jay said we have until the end of September to divide our Neos otherwise we should wait until next spring. I entered my yard early Saturday morning hunting not just for Neos but also Aechmeas to separate and provide a new home. Hopefully by doing so, these pups will be well rooted and established by the time cooler air works its way into the Central Florida area....which could be as early as mid to late October. But if this year is like last year (c'mon repeat!!) we would have until mid-January. I don't remember that scenario ever happening before and more than likely it won't happen again anytime soon.

It's amazing how many plants I have collected in the five years I've been in FECBS! Grabbing pot after pot with multiple plants and just snipping away at the larger varieties, I ended up with a driveway full of bromeliads waiting their turn to be potted or staked. I make a mixture of potting soil, coco coir or peat moss, perlite, fertilizer and mini pine chips in which to sink these young 'uns into. This, as you might imagine, takes a little more time than just using straight potting mix, but this is what I like to do. By the time Sunday evening came around I was almost finished and had plenty of battle scars to show for my efforts. Now my concern turns to what happens (if and when it freezes) to some areas of my uncanopied yard when it frosts? Each year around December I try to figure out how to protect my babies since living in zone 9A it's a sure thing that cold air will come. My back porch (which is fully enclosed) and garage are only so large.... I have blankets and freeze cloths but the "gianormous" task is

daunting. I mutter to myself "why do I have so many plants? I will weed out and make my collection smaller next year!!" But you know what...? That doesn't seem to happen. The plant "encroachment" still always grows. I think I may need some professional help and couch time!

On a serious note, I would like to thank Rick and Francisco for putting on the BSI benefit last month. They invested a great deal of time and effort (not to mention the expense) but I think Rick was quite pleased with the outcome. The amount of plants available was outstanding, the bidding furious and the food as always, Francisco, out this world! Hedy went way over the top with the decorations too - we have many talented folks in this club and I appreciate all their efforts. Thank you to all!

- Bill

Birthdays for October:

Happy Birthday to the following FECBS members:

Susan Amon	Bill McBride
John Quirk	Lynn Rounseville
Betty Dollar	Stanley Marye
Brad Rauch	Ray Trzeciak
Wini Irvin	

Out and about –

As if Rick wasn't already busy enough gathering materials for the raffle and helping Francisco prepare for the spaghetti dinner – on Friday Calandra and I ran into him in Sarasota where we all helped to judge the Sarasota Bromeliad Society's show! And what a great show it was. The plants entered looked beautiful, the Sarasota folks provided a very nice breakfast and lunch for us and the plant sale outside of the show area had some great plants for sale at great prices!



The judges prepare to cast their votes for the best of the best! You may recognize the two judges at the far left.



Colorful arrangement by Bob Stickney of Sarasota makes good use of Billbergia pyramidalis blooms

Send in your photos and articles about bromeliad events, blooms in your garden, or newspaper and magazine articles that may be of interest to our members. Email to cajat@aol.com or mail to Jay Thurrott, 713 Breckenridge Dr., Port Orange Fl. 32127

Mosquitos...Bromeliads...Zika...Just the facts!

Linda Sheetz of the Florida West Coast Bromeliad Society forwarded the following information sheet that was jointly developed by Dennis Cathcart of Tropiflora and Dr. Howard Frank of the University of Florida. One of the benefits of our group belonging to the Florida Council of Bromeliad Societies is that we are in constant communication with other groups around the state and can receive such important information directly from highly respected sources!



MOSQUITOES IN BROMELIADS - What's the Real Story?

The Zika scare has added an element of hysteria to a problem that has been with Florida since people first inhabited the state. Face it; mosquitoes are a fact of life in Florida (and most inhabited areas of the Earth). Historically there have been few mosquito vectored diseases affecting humans in Florida with some outstanding exceptions: Yellow Fever, Malaria, Dengue to name some, with Yellow Fever having been eradicated from our hemisphere and Malaria and Dengue very rare in Florida. Enter Zika with its associated birth defects in humans, add sensational publicity and you have a wave of hysteria that leads to many irrational decisions on the part of the public as well as our political leaders.

A complex problem rarely has simple causes or solutions. The fact that mosquitoes breed in standing water and that many bromeliads retain water between their leaves has led to a over simplistic $1+1=2$ logic. To make any sense of the issue, one must have some facts. The facts are that only some mosquitoes breed in bromeliads and only some of these can potentially vector human diseases. The incident of success of these disease vectoring mosquitoes in completing their lifecycle in a bromeliad is a big factor. Knowing how mosquitoes breed and their requirements to survive is all important to understanding the potential role that bromeliads might play in the spread of mosquito borne diseases. The article below, written by Dr. J Howard Frank, Professor Emeritus, University of Florida, one of the world's leading experts in the biology of mosquitoes in bromeliads and author of many papers on the mosquito-bromeliad connection, is a short but concise overview of the Zika (and other mosquito borne diseases) scare related to bromeliads. Understanding the life cycle of the types of mosquitoes that inhabit bromeliads in Florida and those that can carry diseases is of critical importance and concern for making decisions in this hot-button issue. (Dennis Cathcart, Tropiflora, LLC, Sarasota, FL)

An Ecology-Based View of Mosquitoes in Bromeliads

Dr. J Howard Frank, Professor Emeritus, University of Florida

In nature in Florida: A few native epiphytic bromeliad species impound rainwater in their leaf axils. The northern limit of their distribution is a line roughly between Volusia County and Hillsborough County. Immature stages of two species of the mosquito genus *Wyeomyia* often inhabit these water-filled leaf axils. The life cycle of all mosquitoes is ADULT-EGG-LARVA (4 larval growth stages [sizes])-PUPA-ADULT. Adult females of these mosquitoes will bite people and rabbits, but do not transmit any disease to people. They bite in daylight hours, peaking in late afternoon, not at night. You may encounter *Wyeomyia* mosquitoes in many state parks, and perhaps also in your own yard. Occasionally an interloping mosquito, *Toxorhynchites rutilus*, lays eggs into these leaf axils, but it normally inhabits dark water-filled rot-holes in trees. Unlike other mosquitoes, its adult females do not bite; instead its larvae gain their protein by feeding on pest mosquito larvae!

How do *Wyeomyia* mosquitoes live? Adult females take blood; males and females drink plant nectars. Eggs and pupae do not feed. Dead leaves and twigs and seeds from the tree above fall into the leaf axils, especially during hard rain which adds leachates from the tree canopy and, on breakdown by minute bacteria and fungi, provides food to the bromeliad and to mosquito larvae. Larvae filter-feed on these resources. Typically the water is very clear because the *Wyeomyia* larvae and bromeliads remove nutrients – so clear that it was used for drinking water by early explorers (it would hurt nobody to drink water

with some mosquito larvae). Very many *Wyeomyia* mosquito larvae die due to competition with each other for food (shown by University of Florida laboratory experiments).

Now we grow exotic bromeliads in Florida, so what is the difference?

In 1978-1979, a University of Florida survey was conducted in four urban areas of Florida, of mosquito immatures in exotic bromeliads planted in the ground. The reason was the spread of Dengue fever types II, III, and IV, transmitted by the mosquito *Aedes aegypti* in the Caribbean, a threat to Florida. The question was: what is the prevalence of *Aedes aegypti* in exotic bromeliads? To answer the question, the apparently commonest bromeliad in urban areas, *Billbergia pyramidalis*, was surveyed. Cities surveyed included the Daytona Beach area, Tampa, Vero Beach, and Miami, in collaboration with local Mosquito Control Districts. The result was that 98.8% of all the mosquito immatures were *Wyeomyia*, which do not transmit any diseases to humans; less than half of 1% were *Aedes aegypti*, and about 0.7% *Culex quinquefasciatus*, both of which were interlopers in a bromeliad habitat that had been taken over by native *Wyeomyia* mosquitoes. This suggested that *Aedes aegypti* were but a trivial component of mosquitoes in *Billbergia pyramidalis* bromeliads. Furthermore, the numbers of immature mosquitoes present do not show the **outcome** of extreme competition among mosquito larvae – which is shown only by numbers of mosquito pupae (or emergent adults). The numbers of *Aedes aegypti* surviving to the pupal and adult stage in bromeliad leaf axils is effectively zero (0%).

Hysteria due to the presence of Zika virus in Florida.

Belatedly in 2016, some people have realized that mosquito larvae occur in bromeliad leaf axils in Miami. Apparently they do not realize that studies on the subject were performed in 1978-1979, much less the results of that study. Their whistle-blowing is inappropriate except in the special circumstance that people have allowed the pollution of the water in bromeliad leaf axils. What pollution?

A) do not allow grass clippings from a lawnmower to get into the bromeliads. These clippings rot and enrich the water, making it appropriate for *Aedes* and *Culex* mosquitoes.

B) do not allow the flowers of *Neoregelia* bromeliads to decompose in the water for the same reason. For ease of maintenance, it is best not to grow masses of close-packed *Neoregelia*.

C) do not use the insect growth regulator methoprene (sold as brand name Altosid) nor the bacterium *Bacillus thuringiensis serovar israelensis* (sold under at least two brand names) because it kills all mosquito larvae, including the beneficial *Wyeomyia* as well as the bad ones such as *Aedes* and *Culex* mosquitoes and the dead bodies of the mosquito larvae they kill will rot and eventually will provide nutrient to living *Aedes* and *Culex* mosquitoes.

Summary: *Wyeomyia* mosquito females prefer to lay their eggs in pale green bromeliads and their immature stages

represent 98.8% of all mosquitoes in a typical bromeliad in urban habitats in southern Florida. *Aedes aegypti* females (vectors of dengue, Chikungunya, Zika, and yellow fever) prefer to lay their eggs in black containers of water (think scrap tires and saucers under plant pots). *Wyeomyia* are highly adapted to life in water in bromeliad axils: under conditions of intense competition with *Wyeomyia* in bromeliads, *Aedes aegypti* larvae die. If you think you need to reduce numbers of mosquito larvae in your bromeliads, prefer to use pressure from a garden hose with a suitable nozzle to wash out nutrients (thus starving the mosquito larvae even more) and maybe wash out some of the mosquitoes themselves. Keep the water in your bromeliad leaf axils so clean that you would be prepared to drink it.

A short selection of pertinent publications on mosquitoes by Dr. J.H. Frank:

Frank, J.H., Curtis, G.A. 1977. On the bionomics of bromeliad-inhabiting mosquitoes. III. The probably strategy of larval feeding in *Wyeomyia vanduzeei* and *W. medioalbipes*. Mosquito News 37:200-206.
Frank, J.H., Curtis, G.A. 1982. Bionomics of the bromeliad-inhabiting mosquito *Wyeomyia vanduzeei* and its nursery plant *Tillandsia utriculata*. Florida Entomologist 64: 291-506
Frank, J.H., Lynn, H.C., Goff, J.M. 1985. Diurnal oviposition by *Wyeomyia mitchellii* and *W. vanduzeei* (Diptera: Culicidae). Florida entomologist 68: 493-496.
Frank, J.H. 1986. Bromeliads as ovipositional sites for *Wyeomyia* mosquitoes: form and color influence behavior. Florida Entomologist 69: 728-742.
Frank, J.H., Stewart, J.P., Watson, D.A. 1988. Mosquito larvae in axils of the imported bromeliad *Billbergia pyramidalis* in southern Florida. Florida Entomologist 71: 33-43.
Gettman, A.D., Frank, J.H. 1989. A method to reduce *Wyeomyia mitchellii* eggs in *Billbergia pyramidalis* bromeliads. J. Florida Anti-Mosquito Assoc. 60:7-8
Electronic (WWW)publications. Note that all those on University of Florida servers have been updated since their original publication (and some of the updates have been considerable) so that they may be thought of as works in progress.
Frank, J.H. 1996. A bibliography of the aquatic biota in bromeliads phytotelmata. Published on WWW at <http://entnem.ifas.ufl.edu/frank/BromeliadBiota/bromfit.htm>
Frank, J.H. 1996. Bromeliad-inhabiting mosquitoes in Florida. Published on WWW at <http://entnem.ifas.ufl.edu/frank/BromeliadBiota/mosbrom.htm>

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Looking ahead:

October 7th through 9th and

October 14th through 16th

18th Annual Fall Sale 'Extravaganza' at Searle Brothers Nursery
6640SW 172nd Avenue
SW Ranches, Fl. 33331

Too many different types of plants to list!...but they will have orchids and bromeliads.

Call Jeff Searle at 954/658-4317 for more details or go to www.rainforestcollection.com

October 8th and 9th 2016

University of South Florida Fall Sale
USF Botanical Gardens 4202 E. Fowler Avenue NES107, Tampa, FL 33620

9 am to 4 pm

\$5 general admission

October 22, 2016

Florida Council of Bromeliad Societies
Meeting hosted by Central Florida Bromeliad Society.

February 4th, 5th, 2017

GardenFest! Riverside Park in Vero Beach
15th Annual GardenFest hosted by the Indian River Garden Club. 90 vendors and attended by over 20,000 visitors last year!

July 22nd, 2017

Florida Council of Bromeliad Societies' Extravaganza – hosted by the Bromeliad Guild of Tampa Bay. More information on this will soon be available and we'll pass it along to you, but for now – circle that date on your calendar for next Summer!

May 29 – June 3, 2018

BSI World Bromeliad Conference in San Diego, California

Plan now for what is sure to be an exciting event!

More information to follow as it becomes available....

