



# S.F.V.B.S.

**SAN FERNANDO VALLEY BROMELIAD SOCIETY**

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## FEBRUARY 2016 NEWSLETTER

### OFFICERS

Pres: Mike Wisnev V.P.: John Martinez Secretary: Leni Koska Treasurer: Mary Chan

Membership: Joyce Schumann Advisors/Directors: Steve Ball, Bryan Chan, Richard Kaz -fp, Mary Carroll

Sunshine Chair: Georgia Roiz -Refreshments: Kathleen Misko -Web: Mike Wisnev -FaceBook: Roger Cohen -Editors: Mike & Mary K

next meeting: **Saturday Feb. 6, 2016 @ 10:00 am**  
Sepulveda Garden Center 16633 Magnolia Blvd. Encino, California 91316

### AGENDA

**9:30 – SET UP & SOCIALIZE**

**10:00 - Door Prize – arrive before 10:00**

**10:05** -Welcome Visitors and New Members. Make announcements

**10:15** - Introduce *Speaker: Nels Christianson*

*Program Topic: “Northeastern Mexico Part 1”*

Nels visited Northeastern Mexico in June 2015 with the Cactus and Succulent Society of America. In this program he will share his experiences in the states of Hidalgo, Querétaro and San Luis Potosi. The photos include a mixture of landscapes, Bromeliads, cacti and succulents.



We are lucky to have members like Nels who love to travel and to share those experiences with us. Nels has been a member of SFVBS for a long time; now that he has retired we feel fortunate to see him more often.

Nels loves plants; he has more than 500 Bromeliads, cacti and succulents and many are staged and growing in his own pottery. He is fluent in English, Spanish and Portuguese. He has traveled to Latin America more than 2 dozen times. Nels studied Political Sci., Hispanic Civilization, and Latin American Studies in the USA and Brazilian literature in Brazil. He also judges poetry and several of his poems about nature have been published. **Don't miss this meeting!**

**11:15 - Refreshment Break:** Will the following members please provide refreshments this month: **Kaz Benadom, Cristy Brenner, Pat Byrne, Jeannette Bond, Mike Boess, Mary Chan, Albert Chang, Kim Thorpe and anyone else who has a snack they would like to share.** If you can't contribute this month don't stay away.... just bring a snack next time you come.

**Questions about refreshments?** Contact Kathleen at 818-402-6031 or [leenest@aol.com](mailto:leenest@aol.com)

**Feed The Kitty** - if you don't contribute to the refreshment table, please make a small donation to ([feed the kitty jar](#)) on the table; this helps fund the coffee breaks.

**11:30 - For Show and Tell please bring a plant.**

**11:45 – Mini Auction:** members contribute

**12:00 – Raffle:** We need each member to donate

**12:15 - Pick Up around your area**

**12:30 – Meeting is over—Drive Safely <**

**Mary K is taking a look back at last month.....** As usual we had lots of great food for the lunch. *Kathleen* is doing a great job taking over refreshments and she also added some photos from the meeting to facebook. I don't have the list but thanks to all who contributed to refreshments, show-n-tell, raffle, and mini-auction. Please welcome new member *Vulthya Suor*. At the meeting we tried testing two 2 different portable speakers but there didn't seem to be much interest in pursuing any.

**Announcements:**

- **Happy February Birthday** to *Kim Thorpe 1<sup>st</sup>*, *Mary K. 5<sup>th</sup>*, *Gregg DeChirico 6<sup>th</sup>*, *Nels Christianson 16<sup>th</sup>*, *Teresa Campbell 24<sup>th</sup>* and *Vuthya Suor*.
- **Mailing Membership Renewals to our club P.O. Box** is very good. However the envelopes must be mailed using the **name of the club**. We cannot use an individual's name. Some letters were returned to sender. When renting a P.O. Box you must list names to receive mail there. Those names are posted on the back side for the postal employee's referral; and they have instructions not to place mail in that box other than for those names listed. But of course it depends on who is working that day!! Just mail to **SFVBS membership** and you will be fine.
- **Speakers** - Let us know if you have any ideas for Speakers about Bromeliads or any similar topics? We are always looking for an interesting speaker. If you hear of someone, please notify John Martinez [johnwm6425@gmail.com](mailto:johnwm6425@gmail.com) or Mary K. at 818-705-4728 or e-mail [rango676@aol.com](mailto:rango676@aol.com) <>

**Please pay your 2016 Membership Dues**

**NEED TO RENEW ?.....** Pay at the meeting to: **Joyce** - Membership Chair  
**or Mail check to: SFVBS membership** - P.O. Box 16561 - Encino, CA 91416-6561  
*Yearly Membership Dues \$10.00* for a single or couple

**Please Put These Dates on Your Calendar**

If there is rain please check **web page, email or phone messages** before leaving home for the meeting.

Saturday Mar 5, 2016	SFVBS Regular meeting – speaker <i>Guillermo Rivera</i>
Saturday April 2, 2016	Speaker - <i>Andy Siekkinen</i> – “Brazil Part II: Chapada Diamantina”
<b>Sat. &amp; Sun. April 30-May 1, 2016</b>	<b>LaBallona Bromeliad Show &amp; Sale</b>
Saturday May 7, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday June 4, 2016	SFVBS Regular meeting - <b>STBA</b>
<b>Sat &amp; Sun June 11-12, 2016</b>	<b>SFVBS Show &amp; Sale w/ the Cactus Club</b>
Saturday July 2, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday August 6, 2016	SFVBS Regular meeting –
Sat. & Sun. Aug 6-7, 2016	<b>So. Bay Bromeliad Show &amp; Sale</b>
Saturday Sept 3, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday Oct 1, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday Nov 5, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday Dec 3, 2016	SFVBS Regular meeting - <b>STBA</b>
Saturday Jan 7, 2017	SFVBS Regular meeting - <b>STBA</b>

**STBA = Speaker To Be Announced**

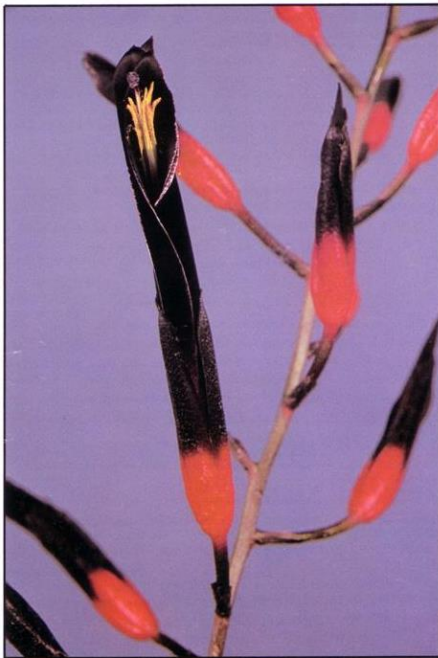
## Really?! - *Pitcairnia*

Having made you all suffer through the first column of Really?!, and continuing with Part 2 below, a bonus column is included. This is the type of article I had expected to write when I started Taxonomic Tidbits.

*Pitcairnia* don't seem to be commonly cultivated, although I know some in our Club like them especially Bob W. and Greg D. They don't seem to be among the most attractive bromeliads. Undoubtedly there are some that are quite pretty, even out of flower.

But some/many/most?? have a great inflorescence, like the one below first described by Prof. Werner Rauh. "*Pitcairnia rubro-nigriflora*, A New Pitcarinia." 34(5) BSJ 222 (1984). It grows in the mountainous forests (800m) of northeast Peru, and at least at that time had no known relationship to another species. Rauh named it after the two colored sepals, which he said give the impression the flowers are already open before the petals develop. I like the petals even more, and I hadn't even focused on the thin white margins. They also have black pedicels. Alas, the second picture shows why the genus might not be so popular. Both photos by Prof Rauh, 34(5) BSJ cover and p 223 (1984).

### Journal of The Bromeliad Society



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**Some tidbits.** *P. feliciana* may be the only bromeliad that grows outside of the Americas- it arrived in west Africa millions of years ago. Unlike most bromeliads, many/most/all? don't use CAM photosynthesis. Finally, you might be surprised to learn that *Pitcairnia* is the second largest bromeliad genus, the first being *Tillandsia*. According to the Bromeliad Taxon List, there are 405 species, which is just one less than the combined total of *Aechmea* and *Neoregelia*!

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**A tener tenera tenerum frenum , vel mica of Botanical Notitia Nomenclature vel Biochemistry illi alio interested in Bromeliaceae. Really?!**

The first column covered the background to this new and hopefully successful column. Many in the Club believe the background might eventually end up as a movie on the Life channel, and a movie committee has been formed to investigate. In any case, the Committee hired a new consultant to make the final decisions, which are as follows.

The author of Tidbits will write this column, but Club members are encouraged to submit columns. The only limitation on subject matter is that at least some of the columns have some relationship to bromeliads, or at least other words with 4 or more syllables.

Pay was heavily negotiated, with the author receiving a monthly fee for each column that is the same as the fee for the Tidbits column. The author wanted more, which the Club refused. Club members who wrote a column would be paid the same fee. To avoid conflicts, columnist will receive the same fee even if another club member writes the column. Finally, club members who actually read the columns may apply for the same fee. Really!

The author may use words such as “I,” “me” “mine” and the like, as often as I want. This has been approved by counsel, who have established a new language, called Wis-glish. Wis-glish is identical to English except that the words “I,” “me” “mine” and the like are hereinafter translated as “this writer” and the like. The articles will appear in Wig-lish, with the understanding that all Club members be conversant in Wig-glish and translate the articles into English as they read them.

The final matter for this column was the title itself. Believe it or not, millions are spent on finding an appropriate name for a product, especially automobiles and drugs. Really! Ford, however, doesn't bother, as evidenced by the Ford Probe. Since the subcommittee rejected Taxonomic Tomes for the old column, this columnist thought the new title might be “Taxonomic Tidbits, really!” Taxonomic Morsels was also considered, but this columnist didn't really know whether a tidbit is bigger or smaller than a morsel. This columnist tried to figure that out, finding one definition of tidbit is “a delicate bit, or morsel of food.” This columnist tried to negotiate a side contract to further investigate the difference, but the Board held firm.

This columnist then considered whether the column should be in Latin, since botanical descriptions have historically been in Latin, and the Club expects that almost all its members are fluent. This columnist decided that was too much, especially since he doesn't know Latin. But what about a Latin title? The Club strenuously objected to a Latin title, which angered this columnist, who consulted an attorney and was advised that the contract gave him wide latitude. He threatened to use “Taxonomic Probes” and the Committee surrendered to Latin. Despite his concerns that one reader knows Latin, and might realize this writer didn't, this columnist settled upon “**A tener tenera tenerum frenum , vel mica of Botanical Notitia Nomenclature vel Biochemistry illi alio interested in Bromeliaceae.**” In the unlikely event you don't know Latin, according to one website for translation, this means “A delicate bit, or morsel, of Botanical Information, Nomenclature or Biochemistry for those interested in Bromeliaceae.”

Finally, the columnist realized other topics might exist. Though doubtfully of interest, one might write about bromeliad cultivation, or pretty cultivars. Or the upcoming Hillary-Trump mixed martial arts event. Really??? Still undecided, the columnist reread the draft and noticed a pattern – really. It just about covers everything – surprise, disbelief or shock the author would even bother to write about the topic. So there you have it – Really!?



# Taxonomic Tidbits – *The Rise (and Fall?) of Orthophytum - just how many are there?*

By Mike Wisnev, SFVBS President ([mwisnev@sbcglobal.net](mailto:mwisnev@sbcglobal.net))

San Fernando Valley Bromeliad Society Newsletter –February 2016

How many of you own an *Orthophytum*? I would guess about half - most likely *O guerkeni* or *O glabrum*. There seem to be a handful of others you see now and then, more in Florida based on articles in the Journal of the Bromeliad Society (“JBS” from now on). But many are quite lovely.

**The Basics.** Here are two, both from Bill Baker. *O guerkeni* is on the left and O Starlights, a cross of *O guerkeni* x *O sucrei*, on the right. While they look rather different than many of the other Bromeliads we grow, they seem a lot like *Cryptanthus*, though I don’t grow many of those either, so I might be wrong. Given its popularity, I was surprised to learn *O guerkeni* was described in 1983!



The genus showed up long ago, in 1854, when it was described by J. D. Beer. (While Beer named the genus, he did not publish a new species, but instead cited an unnamed collection that turned into *O glabrum* at a later time. ) While the name sounds nice, I am not sure it is overly helpful – apparently it derives from the Greek “*orthos*” (straight) and “*phyton*” (plant). In 1908, Ernst Ule named two other genera from two new species he found in an expedition to Bahia, Brazil. These genera and the two species, *Sincoreae amoena* and *Cryptanthopsis saxicola* (meaning a plant resembling *Cryptanthus* growing on rocks) both ended up in *Orthophytum*.

Here is *Orthophytum glabrum* brought in by Steve Ball to one of our Club meetings. Unlike those above, this one looks a lot like a *Dyckia* – not like one of the great hybrids we usually see, but a more mundane *Dyckia* species. But its leaves are softer than most *Dyckia*.



### *Orthophytum glabrum*

of Steve Ball, (Wisnev photo)

The two pictures above show why one can think of them as sort of between *Cryptanthus* and *Dyckia*. Taxonomically, however, this is completely wrong. They are members of the Bromelioideae subfamily, and are in fact related to *Cryptanthus*. *Dyckia* are in a whole different subfamily – so despite the similarity of some to *Dyckia*, they are related only by both being Bromeliads. Like *Hecthia*, each evolved on unrelated paths to have a somewhat similar look

I think the picture below is from a book called Bromeliads in the Brazilian Wilderness (1993) by Elton M. C. Leme, Luiz Claudio Marigo, and Carolyn Brissett.



*Orthophytum saxicola* features interesting variations within a single population. It is found in clusters of completely green plants, while other groups have an attractive bronze tint. Right: view of its habitat.



*Orthophytums* propagate themselves in all sorts of ways. Some pup at the base. Others grow on long or short stolons, or underground rhizomes. Many also are viviparous – their inflorescence pups out all over the place after they flower. These last ones are bit unique in another way. While we all know that many, if not most, Bromeliads will die after flowering, this process can take months to years depending on the plant. Thus, your plant may be a single rosette, flower, pup once so you have two plants but then the mama fades away and you are back to one.

Some *Orthophytums* can be a bit different they can be more like Agaves – by the time they are done flowering there isn't much of a plant left – the leaves have been absorbed to produce the inflorescence. But don't throw the plant, or the inflorescence away -hopefully it will pup if it hasn't already.

This raises some questions – maybe a reader will know? do any Bromeliads that have a terminal inflorescence continue to live after flowering?

The HBG conservancy has some Bromeliads there. Here are two clones of *O megelhasei* that have already flowered. You can see how the plants stretch out while about to flower – they don't look much like *Dyckias* now. More importantly, you can see three pups growing at the top of the inflorescence. One article suggested these pups can be tough to root if you take them up, even if a decent size, so leave them as long as possible.

Unlike a lot of other members of their subfamily, they don't grow on trees. They are instead found growing primarily in rocky habitats, often on rock and sometimes in the ground. It seems all of them grow in eastern Brazil in the Atlantic Rain Forest, typically on inselbergs in Minas Gerais or Espirito Santo, along the Espinhaco Range which ranges from Minas Gerais to Bahia. (You can learn a lot of about geography, climate and geology by studying plants if you are interested.) While they may grow in harsh environments, articles I have seen indicate they can grow well in soil with liberal doses of fertilizer. Some of them are quite spectacular, especially while flowering. Their leaves, which range from green to silver, turn a vivid red at the center.



[Complexes and Subcomplexes](#). Judge Elton M. C. Leme has made huge contributions to the world of Bromeliads. For example, he wrote separate books on *Nidularium*, *Canistrum* and *Canistropsis*. He has also studied *Orthophytum* extensively - more on this later. In 2004, he informally grouped into the *Orthophytum* species into complexes and subcomplexes. Studies on *Orthophytum*, an Endemic Genus of Brazil - Part I by Elton M. C. Leme in J. Brom. Soc. 54(1): 36-7. 2004. Since I haven't seen how (or even if) Leme defines these terms, I can't tell you much more about exactly what a complex is, or isn't. My sense is that he considers them informal groups that may well end up being valid taxonomic groups with more study.

Leme starts out by dividing the species into two complexes. If you look at the pictures above, you have a pretty good chance of guessing how Leme divided them. One good guess, given my text, but not correct is whether they look more like *Cryptanthus* or *Dyckia*. Instead, he used the inflorescence. As noted above, many have long inflorescences like *O megelhasei* – this is the scapose inflorescence complex. A smaller number of them, however, have their flowers growing low in the rosette, much like *O saxicola*. This is the sessile inflorescence complex. In turn, he then divides each complex into three subcomplexes. Each is discussed below.

**Sessile inflorescence complex – subcomplex amoenum.** Let's start with the sessile inflorescences. Leme has three complexes, most in subcomplex amoenum which are characterized being stemless, turning red while flowering and with white or pale colored petals.

Below is *Orthophytum amoenum* in flower.



As you can see, its leaves have turned a brilliant red, and it has white flowers. This picture above is from Bromeliario Imperialis, run by Oscar Ribeiro who has found at least four new Bromeliad species. His website has lots of great information. <http://imperialis.com.br/>. In the section called "About us" he says "This site comes to light as a source of information for botanical experts and amateurs such as me.



The photos of remote habitats are a vivid register of the wilderness where nature still reigns undisturbed and where I feel free and fulfilled like a child.” While we may not explore the wilderness, our hobby often provides the same feeling – the beauty of these exotic plants fills us with the same wonder we had as children when everything was a novelty.

I haven’t come across *Orthophytum amoenum* before – is it in cultivation? One article says it can be rather variable both in terms of size and color. That article compared it to a similar species, *Orthophytum navioides*, that is well known and in cultivation, but I don’t remember seeing one before. This species has smaller spines that are more densely arranged than *Orthophytum amoenum*. In flower, its floral bracts are green, while the leaves turn green, creating a remarkable contrast. Frankly I can’t imagine why anyone might like it!



*Orthophytum navioides*, photo  
by Oscar Ribeiro



Figure 7. The distinctly caulescent habit of *Orthophytum vagans* M. B. Foster.  
Photo by E. Leme.

**Vagans subcomplex.** In 2004, each of the other two subcomplexes had one only species. One is the *vagans* subcomplex which differs quite a bit since it has a stem, and green petals (with white margins) that form a bit of club shape.

*Orthophytum vagans* –  
from JBS 57(4):149-152. 2007.

If you look closely, you can see the petals are green with white margins. But this subcomplex has grown. In that article, he describes a new member of this subcomplex, *O pseudovagans*. Obviously it is similar, but has an interesting mix of features; its stem and petals are shorter, but its leaves and sepals are longer.





Figure 15. When fully exposed to sun light, *Orthophytum zanonii* develops denser clumps resembling a sea coral, and the color of their leaves become completely obscured by a dense layer of white trichomes. Photograph by E. Leme.



Figure 16. *Orthophytum zanonii* photographed in 2000 at the type locality during the rainy season, showing reddish upper leaves around the inflorescence at anthesis not obscured by the trichomes. Photography by M. Zanoni.



**The Rise of the *Orthophytums*.** Since this article (like others) has gotten too long, the scapose inflorescence complex is discussed in Part 2. But this part continues with another topic – the title of this article – The Rise (and Fall?) of *Orthophytums* - just how many are there?” In 1979, there were about 17, most of them described by Smith himself, a couple by Dr. Carl Mez and one by Mulford Foster, all well- known names in the Bromeliad world. In the next quarter century, the number doubled. From 2004 to today, the number more than doubled again - now there are 71 species. If we extrapolate, based on these trends, they should double in 5 more years, and then keep on doubling at a more rapid pace, giving us over 1000 species in 2025. Such are the risks of extrapolation!

All joking aside, the numbers are rather startling. The discovery of this large number of new species can be attributed to the serious work put in by a number of botanists in this genus. We can start with Elton Leme. As a result of his work in the habitat of those genera, the Atlantic Rain Forest, he found a lot more new species. By 2004 he had found and named at least eight new species; three of these articles were co-authored by Harry Luther or Claudio Coelho de Paula.

Then he got serious. In 2004, he wrote an article in JBS called Studies in *Orthophytum* – Part I. He has now authored, or co-authored, 12 such studies in the JBS describing 23 new species (and rediscovering another one.) If that weren't enough, during the last 11 years he, sometimes with co-authors, described another 9 new *Orthophytums* in the JBS, another book with J. A. Siqueira, and other publications. So he and his various co-authors (who include de Paula, Marlon Machado, Ludovic J. C. Kollmann, Leonardo M. Versieux and Andre Paviottii Fontana) have described 33 new *Orthophytum* species after 2003.

**Subcomplex *supthutii*.** Leme's third subcomplex with sessile inflorescences also had only one species in 2004. It was distinguished by its yellow orange petals and the fact the leaves don't change color when the plant flowers. The sole species was discovered and described by Gross and Barthlott. See *Orthophytum supthutii*, a Striking New Bromeliad. JBS V40(5): 217-9 (1990), pictured to the right. It has an interesting history. The authors found it in 1988 and sent it to Leme, who told them “it is really different from everything I have ever seen “ On the advice of Leme and Prof. Werner Rauh they described it.

There is more to the story, but you will have to wait until Part 2 to find out.

***Orthophytum supthutii***  
appearing in JBS V40(5): 217-9 (1990)





Given that Leme and his co-authors have now described over 40 *Orthophytums* out of the total of 69, you might think he is the established expert. But others might disagree. Rafael Batista Louzada did his Master's dissertation in 2008 on the sessile complex. As is typical, the dissertation is hopefully followed by a scholarly publication. In this case, Louzada and Dr. Maria das Gracas LapaWanderley published an article about called Revisions of *Orthophytum* (Bromeliaceae); the species with sessile inflorescences. *Phytotaxa* 13:1-26 (2010). Louzada recently completed his PhD – his dissertation was first comprehensive DNA study on this genus. Dr Wanderley has been a researcher of the Institute of Botany of São Paulo for over 40 years and has been working and writing about *Orthophytums* since at least 1990.



*Orthophytum ulei* photo by Rafael Louzada

The key by Lousada and Wanderley in their 2010 article focused on whether the stem was short or long (like *O vagans*), whether the inflorescence was single or compound, the color of the flower bracts and the leaf blades. The article also described a new species, called *O ulei*. It is characterized by its compound inforescence, pink floral bracts and sepals and lepdote leaves. These two described *O argentum* as well at a later date.

Louzada and Wanderley have also described two new species, including *O argentum* which had been recently described *O toscanoi ssp atropurpureum* by Pierre J Braun and Eddie Esteves Pereira in the U.S. *Cactus and Succulent Journal* (this article was Part 7 in a series entitled Succulent and xeromorphic Bromeliads in Brazil.) This particular plant has been recently introduced by the HBG as an ISI offering (ISI 2013-28) so many of you might have it.

As an aside, Waverley and Leme don't always agree. Two species described by Leme in 2008 had been considered members of existing species by Waverley in 2003. When Wanderley and Abel Augusto Conceicao described a new *Orthophytum* in 2006, they said “[t]he presence or absence of a scape in *Orthophytum*, in spite of defining two informal groups of species, should be analyzed with caution, as observed in *O. saxicola*, where in the same population, individuals are found with very long scapes and others with sessile inflorescence.” *Notas taxonômicas e uma nova espécie do gênero Orthophytum Beer (Bromeliaceae) da Chapada Diamantina. Sitientibus Série Ciências Biológicas* 6: 3-8. [translation by Derek Butcher].

Perhaps more importantly, Wanderley rejected Leme's earlier work in recognizing *Wittrockia*, *Edmundoa* and *Canistrum*. Flora Fanerogamica do Estado de Sao Paulo (Melhem, Wanderley et al. 2007). In turn, Leme and three other professors who have worked extensively in Bromeliads disagreed with her conclusions and analysis in a book review. JBS 58(4) 159 (2008). I would guess that Wanderley and Leme aren't BFF (while this acronym would need no explanation to the younger generations, I only recently learned it means Best Friends Forever).

Having already mentioned most of the authors of all the *Orthophytum* species, I might as well mention the rest. Oscar Ribeiro and de Paula described one more after 2003 (*O. vadaliorum*). Excluding those described by Leme, there were nine others described after Smith & Downs' 1979 Monograph and before Leme started his Studies in 2004. Smith and Downs described *O burlemarxii* in 1979 and Hutchison described *O gurkenii* in 1983. Pereira & Penna honored Smith and Leme by naming *O lymanium* and *O lemei* in the 1980s. One more species has been described by each of Luther, Philcox, Weber, Ribeiro and de Paula, and Baracho & Siqueira, and Gross & Barthlott. Thanks to insomnia for providing this comprehensive list!

With all these folks interested in *Orthophytums*, and mostly living in Brazil, it seems safe to say that more species will be described in future years.

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## Taxonomic Tidbits – *Yellow/green petalled* *Billbergia - Part 1 (B. amoena)*

By Mike Wisnev, SFVBS President ([mwisnev@sbcglobal.net](mailto:mwisnev@sbcglobal.net))

San Fernando Valley Bromeliad Society Newsletter –February 2016

Preview of coming attractions. The impetus for this article is an unlabeled raffle plant that seems to be a form of *Billbergia amoena*. Call it *Billbergia* 1A. It has very light yellow-green petals with a blue tip. Having not seen all that many *Billbergia*, this shade of pale yellow-green seemed a bit unusual to me, so I was curious if there were other *Billbergia* species with yellow petals. When I went through Derek's treasures, I didn't see all that many, so I didn't think this would be a particularly long series of articles. But there were some twists and turns.

Naturally, I had to start with *Billbergia amoena*. Because *Bill. amoena* has a blue tip, Part 2 discussed another species with a blue tip, and then another. It wasn't until Part 5 that I realized the title has an omission – it should say partially yellow/green, partially blue petals. But that is a handful, so I will leave it as it is.

It wasn't until Part 7 that I realized by including species with partially blue petals I was covering well over half the species in subgenus *Billbergia*! Part 7 actually addresses the ones without blue in the petal.

*Billbergia amoena* is an exceedingly variable plant with a very large distribution in Brazil. In fact, its distribution seems to be larger than the entire *Quesnelia* genus. Given this, it is hardly surprising it is so variable.



Depending on your source, there are about nine varieties of *B amoena*, differing primarily based on sepal and petal color, as well as length of stolons. The species is found from Bahia in the mid northeast, extending south all the way into Santa Catarina and west into Goiás.

The leaves of the species are also quite variable. In Smith's Monograph, the leaves are described as "8-20 in a subellipsoid rosette, very variable, 3-6 dm long, from densely lepidote on both sides to nearly glabrous; ... Blades ligulate, broadly rounded or acute, apiculate, slightly narrowed toward base, usually all green but sometimes tinged with red or white-spotted, 17-55 mm wide, serrulate to subentire." The range of size, color and lepidote is probably wide enough to include almost all *Billbergia*.



Two varieties have been described based on their leaves. The first was var. *rubra* described by Mulford Foster in 1956 for its rich red leaves with spots. Here is a picture of var *rubra*, from Bill Baker, originally from Seaborne Nursery.

labelled *Billbergia amoena rubra*.

Foster provided an excellent overview of this variety and the species as a whole:

“This new variety is a very large plant and grows to be from two to three times as large as any of the several varieties of *Billbergia amoena*. The leaves are of a rich red color and contain many white and yellow spots on them; they may attain a length of from twenty-four to thirty-six inches, with wider leaves than other varieties of this species.



*Billbergia amoena* is possibly the most variable species in the genus. Each locality in Brazil where this species is native, and it has quite an extensive range, seems to produce a different variety, although but few of them have been named. The writer has collected at least six different varieties and it would be quite easy to believe them to be different species until the flowers have appeared.

In sizes they range from eight inches to thirty-six inches in height and in leaf colors of plain, light or dark green, red-bronze, or maroon, to vividly spotted or blotched. But always the same flower with green ridged ovary and blue-green sepals and petals with blue tips. One exception, however, is *Billbergia amoena* var. *viridis* which has the plain green petals and sepals minus the blue tips. This last variety has, possibly, the most colorful leaves of them all.

*Billbergia amoena* with all of its varieties makes very interesting material for hybrids and, invariably, show its many definite varietal characters in any cross in which it is used.” Bull. Bromeliad Soc. 6(5):76.1956.

However, this variety is no longer considered valid. “In the original description the variety was distinguished as having red leaves, but field surveys have shown this color to be a result of different patterns of light intensity.” Talita Fontoura in *Selbyana* 15(2); 79-81. 1994. For the two cents it is worth, the Seaborne plant seems to stay red all year even though it gets virtually no sun in the winter. Derek pointed out, however, that in habitat many vary in color genetically, rather than sun intensity - the green ones may thrive in shade, while the red ones do so in sun.

Variety *cylindracea* is known for forming a cylindrical tube, with only five leaves, marked with broad white bands. More on this variety later.



As noted above, the typical variety has green sepals and petals, but both have blue tips. It seems the color actually varies from a very pale yellow green to a fairly typical green. Below are examples of two that fit this description, though the one on the left is much more faintly marked.



Actually both of these are var. *stolonifera*, which is known for its long stolons unlike the other varieties. Both are pictured below. The one on the left was labelled *amoena stolonifera* albomarginata. Some would prefer albomarginate, since it isn't a proper species name and thus shouldn't be Latin. The one on the right is labelled *amoena striata*, which isn't an accepted name, but appears to relate to the striated variegation on the leaves. It also seems to be var. *stolonifera*. The striations vary on each rosette, and one seems to not have any. Similarly, one of the albomarginata rosettes has a few striations, while others don't, though so far all have the white margins.



Labelled *amoena striata*



*Billbergia amoena stolonifera* albomarginate.

One common denominator of these various forms is their generally upright inflorescence and tiny floral bracts. In the pictures above they are hardly visible – the large red bracts are peduncle bracts (on the peduncle) or primary bracts (at the base of the branches).



Variety *viridis* differs in that the petals are all green without a blue tip. The Seaborne clone seems awfully close to var.

*viridis* -it has just the faintest hint of blue at the very tips – so faint I didn't notice it until I did this article. In fact, I am not altogether sure it is blue or if instead the petals have a few hairs at the apex. Smith describes the sepals as being white-flocculose at the apex, but doesn't mention this for the petals. It also has rose pink

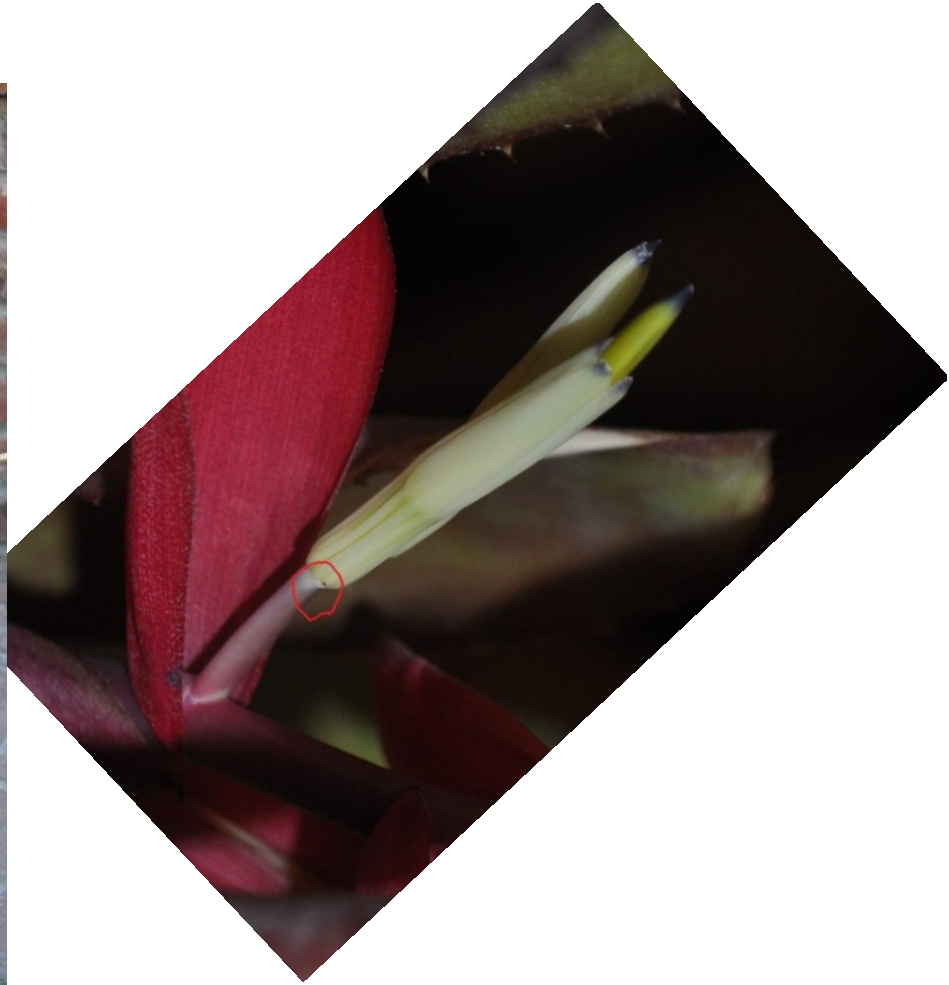
scape bracts. When I look at other pictures on FCBS, some the var. *viridis* also have rose pink bracts, and perhaps a faint blue tipped petal, but it is hard to tell from the photo. In fact, one set of photos on FCBS appear to show a rather distinct blue tip, so much so that I am not sure I would call it var. *viridis*. Some of the var. *stononifera* clones have all green petals, and are called *B. amoena* var *stolonifera* forma *viridiflora*.



**Var. *minor*** (shown to right) supposedly has a red tipped sepal, which is strange since the few pictures of it seem to show a red sepal that that is green or blue at the very tip. Var. *flavescens* differs by having a yellow tipped petal (but no pictures are available). Another variety has a smooth ovary as compared to the furrowed ones of all other varieties.



Below is **unlabeled *Billbergia*, 1A**, from the Club raffle; I wasn't even sure of the genus until it flowered. Though it has very pale flowers, based on the range of colors seen in Derek Butcher's pictures, it seems to fit within *Billbergia amoena* var *amoena*. I have circled the very tiny floral bract, characteristic of this species, with a tiny red tip.



To clarify a few terms, and avoid confusion, this flower is sessile meaning it has no flower stalk. Don't be fooled by the apparent stalk below the floral bract – that is a branch of the inflorescence to which two flowers are attached.





Here is **unlabeled** *Billbergia* 1B. Look at how the color of the leaves changed from April, when I got it, to August. At least I knew this one was a *Billbergia*, but I was surprised by the inflorescence.



It seems to match *B amoena* var *viridis*. I will have to see if there is a hint of blue in the petal tips next time it blooms.

Actually, the plant seems to match var. *cylindracea* fairly well – a cylindrical rosette with few leaves, and broad white bands. Compare it with the picture below. Interestingly, the picture shows violet petals, not blue tipped. That feature isn't mentioned in the original description in the 1972 Bradea, although Smith says the picture in that publication shows “a wholly dark petal blade.”

Most of the rosettes of my plant have 4-5 long leaves (from 60 to over 100 cm), with 2 or 3 extremely short ones (less than 15 cm), while the description says it has five. But the plant pictured below certainly seems to have more than five. Maybe mine could be called var. *cylindracea* forma *viridiflora*.



Does it make sense to have all these varieties? For example, var *cylindracea* is distinguished by having 5 long leaves in a cylinder - I wonder if all of the plants in the var *cylindracea* population have exactly five leaves? It seems lots of *B amoena* have white bands, so it doesn't make much sense to distinguish var *cylindracea* on that basis. Does it make sense to name a variety for having five or six leaves when the regular range is 8 – 20. This is often a problem with increasingly narrow forms and varieties – you could end up with many names, and intermediates of many of them.

Leme questioned the validity of these varieties. He notes that environmental changes in shape, form, size and color can make it difficult to identify varieties. Except for var. *stolonifera*, there is not “evidence of geographical support for such varieties as, for example, the predominance of some in a given area as compared to others.” Leme, Brazilian Reports, Numbers 2, 3, and 4. 39(1) JBS 17 (1989). Barros & Costa noted the many varieties and apparently didn't recognize any of them. Acta Bot. Bras. 22(4): 1172-92. 2008.

- Should I label my two unknown plants *Billbergia amoena*? More on that in Part 2, or 3, along with one more variety –*Billbergia amoena* var. *carnea*, as well as other possibly related species.