JOURNAL

OF THE BROMELIAD SOCIETY

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Front Cover. Blooming specimen of *Tillandsia edithiae* var. *araucariofolia.* Photo by Eric Gouda. See story starting on page 76.

Back Cover *Orthophytum rafaelii* in flower. Photo by Alan Herndon. See story starting on page 109.

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EDITORIAL

President's Message

Jay Thurrott

With this issue I would like to welcome Alan Herndon to the position of Journal Editor and wish him only the best as he takes on this very important task. At the same time I must express my heart-felt thanks to departing editor Evan Bartholomew for a job well done and regret seeing him go. Evan did a marvelous job in striking that delicate balance between scientific articles and general interest articles that is so hard to achieve, and we all wish him the very best in his future endeavors.

For those of you who don't know him, Alan and his wife Rhonda own Tradewinds Tropicals nursery in Homestead, Florida and have been driving forces in the Bromeliad Society of South Florida for many years. In addition to having served in most of the officer positions in that club as well as show chairman for their shows, a director in the BSI, and has been a very active member of the editorial review committee for the BSI Journal. In his spare time, he has developed a computer program to simplify the judging process in standard bromeliad shows. A Florida native (now there's a rare thing!), Alan was born in Miami, grew up in the Homestead area and has worked with people in the bromeliad industry for decades. From a "bromeliad family", Alan also has two brothers located in the Miami area specializing in bromeliad nursery/sales. A trained botanist, Alan attended Cornell University in New York and then went on to obtain his Masters degree from FIU. I look forward to working with Alan and ask you all for your support as he joins that elite group of bromeliad enthusiasts as editor of the Journal of the Bromeliad Society.

The World Conference is just a few more months away now, and I'm guessing that you're as excited as I am about paying a visit to the Hawaiian Bromeliad Society and seeing how they grow 'Bromeliads in Paradise'. I look forward to seeing you all there!

Jay Thurrott

NOTICE OF ANNUAL MEMBERSHIP MEETING

The annual meeting of the BSI membership will be held at the Ala Moana Hotel, located at 410 Atkinson Drive, Honolulu, Hawaii 96814 on Tuesday, September 9th, 2014. This meeting provides the opportunity for any BSI member to address the Board of Directors with issues of common interest and will begin promptly at 9a.m. Immediately following the membership meeting will be the annual Board of Directors meeting at the same location.

Conference Corner

Bonnie Boutwell

July Update

Time is running out – if you have not registered – you'll be missing a GREAT Conference!

For those of you who are registered, you'll be receiving a mailer with lots of new information – should be to you about mid-July!!

There is still time to make a donation or to advertise in the program. All affiliates should be supportive of the organization and take an ad in the conference program. The deadline has been extended to August 1, 2014.

Please contact Stan Schab - Schab@hawaii.edu if you plan to take an ad so that he can reserve space. Payments for ads can be made to: Raleigh Ferdun, Treasurer
3558 B Woodlawn Drive
Honolulu HI 96822

I don't plan to have anything new to report in the next few months – the plans are complete – it's time to enjoy! I'll be traveling to Hawaii in mid-August to assist our members in last minute preparations for Bromeliads in Paradise.

Hope to See You Soon –

Bonnie

June Update

One month has passed and lots of schedule changes have been made! Please know that the following changes in the WBC 2014 agenda have been made in the best interest of you, our registrants, and BSI:

- There will not be a judged show at this conference. After all the efforts put forth, the conference committee had not received any inquiries about bringing plants into Hawaii for the show and the commitment of hotel space for this event could not be justified.
- To accommodate members who might still be thinking about bringing a show plant as well as our Hawaiian members, we are planning an exhibit area within the sale room. Details will follow.
- Additional changes to the agenda include moving the Rare Plant Auction to Saturday evening, following the Banquet. The Nursery tours on Friday afternoon will probably run longer than anticipated and no one wants to be rushed through a rare opportunity to visit Sharon Peterson's and David Fell's nurseries.
- Members registered for WBC 2014 by June 30, 2014 will receive a mailing from the Hawaiian Bromeliad Society with all the necessary information needed for new optional tours and events as well as helpful information for a stress-free week in Paradise.

May Update

September will be here before you know it – have you finalized your plans for WBC 2014?

The Hawaiian Bromeliad Society has worked very hard to develop an interesting, educational and fun-filled week of activities and looks forward to welcoming BSI to Bromeliads in Paradise.

In an effort to meet the needs and requests of our registrants, we continue to update the schedule:

- For those who have not made room reservations at the Ala Moana Hotel, please understand that the hotel only guarantees the BSI room rate through August 9, 2014. We encourage our members to stay at the hotel for many reasons – convenience to all activities and tour pick-ups as well as helping to fulfill our contractual room commitment.
- As a follow-up to the April 2014 Conference Corner post on obtaining phytosanitary certificates, the USDA has asked us to clarify the information by publishing the following statement: "The Federal Phytosanitary Certificate process can require a lot of time. We recommend that all exporters contact the Honolulu Plant Inspection Station to schedule an appointment for export certification. The Honolulu USDA Plant Inspection Station is open Monday-Friday. Federal phytosanitary certificates for international plant exports are issued from 0800-1530 (3:30 pm) A scheduled appointment is necessary. For more information, please contact a PHSS at the Honolulu Plant Inspection Station by phone at (808) 834-3240 or e-mail Mary Beust, Mary.V.Beust@APHIS.USDA.gov, and/or Joseph Vukovich, Joseph.M.Vukovich@APHIS.USDA.gov."

In other words, if you intend to buy plants at the Conference and fly with them to another country on Saturday or Sunday, you will have to take your plant purchases to the Honolulu Plant Inspection Station (at the airport) either Thursday or Friday to obtain the required phytosanitary certificate. You should schedule the appointments well ahead of time. Also, allow sufficient time to prepare your plants for inspection before the appointment. Different countries place different restrictions on plant importations. You must be familiar with the conditions required for importing plant material into your country and be ready to show how your purchases meet those conditions. A federal phytosanitary certificate will not be issued unless the inspectors are satisfied that you have complied with all relevant conditions.

Phytosanitary certificates will not be issued at the hotel. However, a secure packing and holding area will still be available on Saturday.

If you plan on purchasing more than a few plants, or purchasing plants after the Inspection Station closes on Friday, shipping through one of the local nurseries selling at the conference would be worth exploring.

The most recent conference updates and schedule changes can be found on the web at www.bsi.org. Please check the site regularly as we approach the conference dates.

BSI Judges School II at the 2014 World Conference

Dr.Larry Giroux

At each World Bromeliad Conference a BSI School is conducted for those who are unable to attend the Series of Schools held at strategic locations in the various BSI Regions. School I of the World Conference Judges School series was held at the 2012 WBC in Orlando, Florida.

School II will be held on Tuesday, September 9th, 2014 at the Ala Moana Hotel in Honolulu, Hawaii, site of the 2014 WBC

The Agenda for School II (which is listed in the New Handbook) is as follows:

Definition, Purpose and Requirements of the Standard BSI Show
Individual Specimen Bromeliads
Multiples
Horticultural Displays
Major Awards Judging
Characteristics of Judges
The Genus *Tillandsia*
Point Scoring of various live Bromeliad plants

We will continue to use the New Handbook as was started with School I; copies of which were distributed at the last World Bromeliad Conference in Orlando to students and BSI Judges. The Handbook for Judges, Exhibitors & Affiliates was revised in August 2012. The New Handbook includes all the technical information and discussions concerning exhibiting and judging (Chapters I-XI of the earlier handbook). It does not contain the specific descriptions and discussion about the Bromeliad genera (Chapters XII-XIV) or the abbreviated glossary. Copies of this information relevant to School II will be available to registered students and attendees or can be found in the Old Handbook.

The schools can be taken in any order, so anyone who requires School II or anyone who wishes to start the schools or wishes to participate in this educational event can attend this school. Those interested in attending, should contact Betty Ann Prevatt, Judges Certification Committee Chairman, before August 29th, 2014. If you have any questions contact Betty Ann Prevatt.

Email: bprevattpcc@aol.com
Telephone: 239-334-0242
Address: 2902 Second Street, Fort Myers, Florida 33916, USA.

Currently the scheduled instructors will include Dr. Larry Giroux, Ms. Carole Richtmyer and Mr. Rick Richtmyer.

The school is all day (until students finish their point scoring; usually 4-5PM); lunch will be provided and the cost is $25.00 (payable at the school). The Agenda for School II and additional educational material will either be mailed to or available to registered students at the School.

BROMELIADS IN PARADISE
Ala Moana Hotel - Honolulu, Hawaii

Final Schedule of Events – Revised July 5, 2014

Monday Sept. 8..... **Arrivals / Hotel Check-in**

Tuesday Sept. 9

8 am – 9 am ..... **Board Registrations & Continental Breakfast**
9 am – 9:30 am ..... **BSI Annual General Meeting**
9 am – 5 pm..... **Judges School II**
9:30 am – 5 pm..... **BSI Annual Board Meeting**
12 – 1 pm..... **BSI Board & Judges School Participants Luncheon**
6:30 pm ..... **Board Cocktails & Dinner**

Wednesday Sept. 10

8 am – 5 pm..... **Conference Registration, Hospitality & Aloha Baskets**
8 am – 3 pm..... **Plant Sale Vendor Set-up**
9 – 10 am..... **Welcome Address: Jay Thurrott, President**
10 am – 11 am ..... **Seminar #1**
11 am – 12 pm..... **Seminar #2**
12 – 1 pm..... **Box Lunch – All Registrants**
1 pm – 2 pm..... **Seminar #3**
2 pm – 3 pm..... **Seminar #4**
5 pm – 9 pm..... **A "Hawaiian Evening" – Additional Cost to Registrants**

Thursday Sept. 11

8 am – 5 pm..... **Conference Registration, Hospitality & Aloha Baskets**
8 am – 2 pm..... **Plant Sale Vendor Set-up**
9 am – 12 pm..... **Home/Garden Tours – Included in Registration**
12 pm – 2 pm..... **Luncheon – All Registrants**
1 pm – 4 pm..... **City Tour – Included in Registration**
2 pm – 9 pm..... **Plant Sale Open to Registrants Only**

Friday Sept. 12

8 am – 5 pm	**Conference Registration, Hospitality & Aloha Baskets**
9 am – 5 pm	**Plant Sale Open to the Public**
9 am – 10 am	**Seminar #5**
10 am – 12 pm	**Round Table Discussion: Bromeliads - Hawaiian Style**
12 – 1 pm	**Box Lunch – All Registrants**
1 pm – 6 pm	**Nursery Tours – Included in Registration**

Saturday Sept. 13

9 am – 3 pm	**Plant Sale - Open to the Public**
9 am – 5 pm	**All Day Optional Tour – Polynesian Cultural Center & Dole Plantation. Additional Cost to Registrants**
6 pm – 10 pm	**Cash Bar, Banquet & Rare Plant Auction**

Sunday Sept. 14	**All Day Optional Tour to Hilo – Additional Cost to Registrants**

NOTICE REGARDING THE JOURNAL OF THE BROMELIAD SOCIETY

There has been much confusion regarding the status of Journal issues published in Volume 63. To understand the actual status, we need to remember that a volume of the Journal has contained 288 pages for many years. These were published in a series of six 48 page issues. By page count, the issue printed as volume 62(6) contained 48 pages beyond 288. The second half of this double issue should have been labeled 63(1). The issue labeled 63(1) printed in July 2013 was again a double issue and should have been labeled 63(2-3). Finally, the issue labeled 63(2) printed in October 2013 was a single issue that should have been labeled 63(4). In summary, the equivalent of 4 issues were published for volume 63 during 2013. Starting with volume 64, the Journal will be published in four issues, normally with 72 pages apiece. The current issue 64(2) has been expanded to 84 pages so 64(1) and 64(2) combined contain 144 pages as expected for 2 published issues. The BSI Board is looking into an appropriate means of replacing the two issues that volume 63 is lacking.

A Taste of Hawaii

Jay Thurrott

The Bromeliad Society of the Palm Beaches (BSPB) recently was treated to a sneak preview of what they might expect to see at the 2014 BSI World Conference in Hawaii. Word was passed around in the Florida bromeliad community that noted nurseryman and bromeliad hybridizer David Shiigi would be the speaker at the BSPB March meeting - with the result that over 100 enthusiasts arrived at the Mounts Botanical Gardens auditorium, eager to hear David's program (Fig. 1).

After BSPB president Joe Libertucci introduced David and his wife Sherlette, David presented a series of slides of the 'Shiigiland' nursery in Hawaii. The audience was treated to photos of some of the colorful *Vriesea*, *Guzmania*, and *Neoregelia* hybrids that he is most known for with commentary by David on some of the sights that can be seen by visitors to the nursery. A series of nostalgic photos of notable past visitors included many faces long recognized as leaders in the world of bromeliads, some sadly no longer with us.

Figure 1. Part of the crowd attending David Shiigi's lecture in Palm Beach. Photo by Jay Thurrott.

The Shiigi's also offered a few representatives of these hybrids for sale to those fortunate enough to attend – thanks to Florida nurseryman and hybridizer Grant Groves, who received the shipment of plants from Hawaii and transported them to West Palm Beach in time for the meeting.

The Shiigi's nursery is located on the Hawaiian island of Hilo and will be one of the stops on Sunday's optional tour during the 2014 BSI World Conference. The schedule of events for the conference can be found at the website www.bsi.org.

The Bromeliad Society of the Palm Beaches meets monthly at the Mounts Botanical Gardens in West Palm Beach, Florida. Visitors are always welcome.

Figure 2. David Shiigi hard at work on his presentation.

Figure 3. Joe Libbertucci (BSPB president), Jay Thurrott (BSI president), David Shiigi and Patricia Bullis

A new white-variegated bromeliad - *Hohenbergia magnispina* 'Karla'

Hermann Prinsler[1]

Figure 1. Blooming plant of *Hohenbergia magnispina* 'Karla'. Photo by Hermann Prinsler.

(Editor's Note: This article in German with English translation was first published in Die Bromelie 2013(2) and this slightly modified English version is reprinted with the author's permission.)

[1]Pantaleonstr.7, 53567 Buchholz, Germany, Tel.: 02683 9452338, Hprinsler@aol.de

In 1987 I saw some nice looking tank type bromeliads on a shelf at the Femo nursery in Langenfeld/Germany. Mr. Mowinski told me that these plants were collected by Prof. Werner Rauh and the Brazilian cactus specialist Leopoldo Horst on a trip in Brazil. I was lucky to buy all the plants back then.

At home the plants were sorted and potted and put into my Bromeliad collection. There were three different types. Whether they were three different species, was not known at that time. I could learn that they were *Hohenbergia*. One species was determined by me to be *Hohenbergia leopoldo-horstii*. In the next years I began to propagate the plants to build a stock of them. I had the idea to cultivate them more like succulents because of their grayish scales that made them look like they had been covered with flour, their large spines and hard leaves. The plants got more light and a less organic substrate. Under these conditions the leaves colored light gray and the shape of the plants got more bulbous.

Figure 2. Top view of *Hohenbergia* 'Karla' showing the even white bands along the sides of the leaf blades. Photo by Hermann Prinsler.

A few years later the stock of these plants had grown and I gave away the first plants to people that were interested in them.One day I saw a plant that had developed a single leaf with a white longitudinal stripe on it. The following year I took off the pups from this plant. The pup, that had been growing in the axil of the striped leaf showed some more leaves with white stripes. Over the next years, through selection, I developed a form with uniform white margins around all leaf margins from all the pups that I got by propagation. After a long time, it is 25 years since then, I have got a stock of 150 uniformly albomarginate plants. I am very happy about my success since I'm cultivating many variegated Bromeliads in my collection and I always looked out for these.

Three years ago Uwe Scharf from Leipzig, Germany told me that my *Hohenbergia* "*leopoldo-horstii*" was a *H. magnispina*. I got a true *H. leopoldo-horstii* from him.

The plant I am presenting here is named for my wife Karla: *Hohenbergia magnispina* 'Karla'. The two other types of *Hohenbergia* that I bought long ago are *H. uticulosa* on the one hand and a *Hohenbergia* species, that is yet to be

Figure 3. Close-up of inflorescence showing the violet flower petals. Photo by Hermann Prinsler.

Figure 4. Even closer view of the inflorescence tip showing the wooly pubescence on the 'cones'. Photo by Hermann Prinsler.

determined, on the other hand. All three types have similar inflorescences. In future a scientist should try to find out if these three types are really three different species.

The plant should be grown quite bright. The substrate should not contain too much humus but be more like a substrate for succulents. After hardening the plants in spring they can be grown outside in full sun throughout the summer.

Figure 5. Side view of *Hohenbergia* 'Karla' showing the even white bands along the sides of the leaf blades. Photo by Hermann Prinsler.

A new variety of *Tillandsia edithiae*

Eric J. Gouda[1]

In 1974, Werner Rauh described the stunning *Tillandsia edithiae* Rauh (1974: 19), with its bright red inflorescence and fleshy red corolla, from La Paz, Bolivia. The species is quite variable and plants from several populations look different. The most common form has somewhat purplish tinged cinereous leaves and in 1995 we saw steep mountain slopes fully covered with this plant in the province of Santa Cruz, Bolivia, indicating that it is locally very abundant. Near Samaipata we collected a very short leaved and succulent form that unfortunately did not survive. Some populations have somewhat larger plants with leaves about 8 cm long (Fig. 1) and others look similar but with shorter leaves of about 5.5 cm long. In cultivation they can grow to over half a meter in length, developing many offshoots on the old leafless stem. Although beautiful, they do not flower often. In a clump of the several shoots, normally only a few will flower at the same time and some of my clumps have never flowered.

There are also more green forms that do not develop that purplish leaf coloration, even when hanging at the same location (see Fig. 2 also from Samaipata). In fact each population looks slightly different and it would not be practical to give all those forms a name except for the very obviously different ones, like the variety described in this article.

Figure 1. Clone of *Tillandsia edithiae* with 8 cm long leaves showing the common 'purple' coloration; collected near Samaipata, Bolivia. Photo by Eric Gouda.

[1]Utrecht University Botanic Gardens, The Netherlands. e.j.gouda@uu.nl

Figure 2. Clone from Samaipata, with shorter leaves than the plant shown in Fig. 1 and no purple tint in the leaves. Photo by Eric Gouda.

Tillandsia edithae var. ***araucariofolia*** Gouda var. nov. (fig. 3, 4).

A variety that differs from the type variety in having strict (erect), relatively short, 3-4 cm long leaves ending in a sub-pungent apex (vs. curving leaves 5.5-8 cm long with a more or less flexible apex).

Type: Bolivia, new road from St.Cruz to Cochabamba, 1500 m. elevation, C.S. Gouda s.n. October 1996. Introduced into the Utrect Botanical Gardens in 2008, flowering June 2014. (holotype L).

Plant long caulescent, 14 cm tall, very dense, with many leaves. **Leaves** polystichous, coriaceous, 3-4 cm long, very densely lepidote, on both sides, with subappressed whitish and dark centered scales, cinereous-green; sheaths large (about half the length of the leaf), with a layer of extending trichomes at the margins, thin coriaceous, indistinguishable from the blades, pale green and membranaceous toward the base; blades acute and sub-pungent, divergent (sub-erect), somewhat stiffly and more fleshy toward the apex, triangular. **Peduncle** short and concealed by the leaves, wholly covered by bracts,

Figure 3. *Tillandsia edithiae* var. *araucariofolia* flowering in cultivation at the Utrecht University Botanic Gardens. The flowering stem was pressed to make the holotype. Photo by Eric Gouda.

erect, 3 cm long, 7 mm in diameter; peduncle-bracts erect, foliaceous. **Inflorescence** simple, fertile part ovoid and acute 3 cm long, 1.5 cm wide, densely 7-flowered. **Floral-bracts** ample, inflated, 2.2 cm long, 2 cm wide, many times as long as the internodes, much exceeding the sepals, glabrous except the lepidote apex in the lower ones, bright red, rounded but slightly cucullate or apiculate, erect, very densely imbricate, thin coriaceous, nearly even, ecarinate, sub-orbicular, with thin margins. **Flowers** contiguous, subsessile; pedicel 2 x 5.5 mm long, strongly complanate and bicarinate. **Sepals** membranaceous or chartaceous, 11-13 mm long, 4.5-5.5 mm wide, with broad hyaline margins, evenly short connate for 1.5 mm, glabrous, few nerved, elliptic, rounded or slightly cucullate obtuse, pale (whitish) green, adaxial ones distinct from the anterior ones, carinate and strongly incurved. **Petals** fleshy, 23-25 mm long, 3.5 mm wide, ligulate, rounded, bright red. **Stamens** included; filaments strap shaped and flaccid,

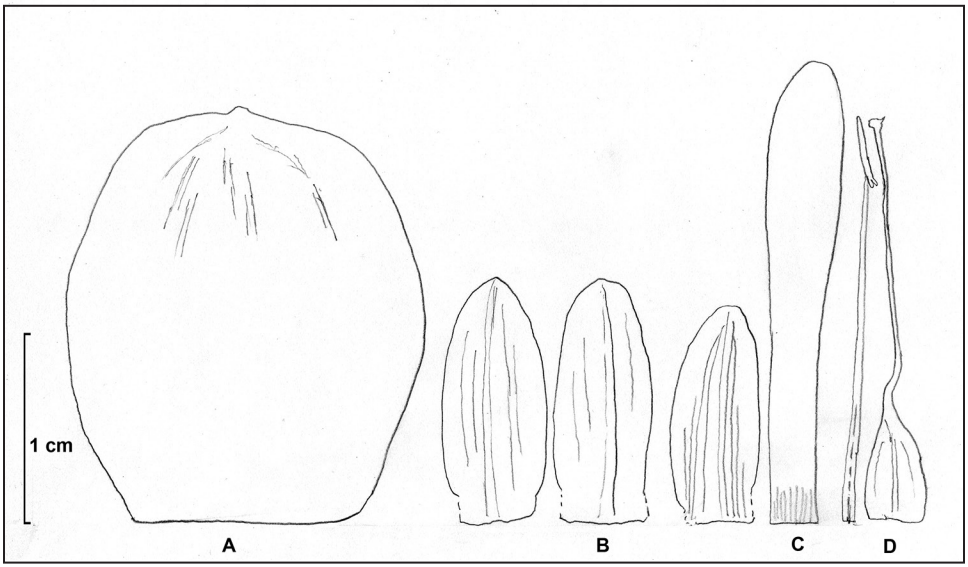

Figure 4. Drawing from the type specimen of *Tillandsia edithiae* var. *araucariofolia*: A. floral bract, B. sepals, C. petal, D. stamen and pistil.

straight (not plicate), 1.8 cm long; anthers dorsifixed at about one forth of its length from the base, linear-sagittate, obtuse, 3 mm long, pale yellow. **Pistil** slightly exceeded by or about equaling the stamens; ovary complanate ovoid, 5 mm long, tapering into the style; style slender, elongate and many times as long as the ovary.

Etymology: the plant resembles a short branch of *Araucaria araucana* (Monkey-puzzle tree). Araucario(like Araucaria)-folia(leaves).

Although this variety is very beautiful, it is not easy growing like the typical variety. It grows very slowly: only doubling in size during the last 6 years and flowering for the first time now. Only one of the original 3 shoots has flowered and now it is going to produce small pups at the base.

Literature cited

Rauh, W. (1974) Bromelienstudien (Mitteilung 2). I. Neue und wenig bekannte Arten aus Peru und anderen Ländern. Tropische und subtropische Pflanzenwelt 8: 553-569.

Introducing *Neoregelia watersiana*

Peter Waters

Neoregelia watersiana Leme was found by Elton M. C. Leme, Peter Waters and Rafael de Oliveira in October 2009, during an expedition to a mountainous region, in the county of Santa Maria Madalena, northern Rio de Janeiro state, where the State Parque of Desengano is located. The park covers an area of 22,400 hectares (86 square miles) and is characterised by sharp ridge tops, sugar loaves, hills, culverts and slopes up to 75 degrees of tilt with staggered heights: Desengano Peak, at 1761 metres, Pico São Mateus 1576 metres, and the Pedra Agulha, 1080 metres. This preserve is valuable and attractive for the natural scenery, including many rivers and waterfalls. Many watercourses arising in these highlands provide the water supply to the main villages in the municipalities of St. Maria Madalena and São Fidelis. Temperatures range between 6° and 35°C.

N. watersiana lives in the canopy of the hygrophilous (water-loving) Atlantic Forest within the park, forming dense clumps on the taller trees, at about 1056 m elevation. This species was formally described in Leme & Kollmann (2013). Here it is introduced to our readers for the first time.

The following detailed description of *Neoregelia watersiana* and discussion of similar species was prepared by Elton Leme.

Plants epiphytic, propagating by basal shoots. **Leaves** ca. 12 in number, coriaceous, arcuate to spreading-recurved at anthesis, forming at the base a crateriform rosette; sheaths broadly elliptic to suborbicular, subdensely whitish lepidote on both sides, green toward the apex and whitish near the base, subcoriaceous, elliptic, 10–11 cm long × 8–9 cm wide; blades sublinear, inconspicuously and sparsely white lepidote abaxially, glabrous adaxially, green to dark red toward the apex (Fig. 1, 2), subacute to obtuse and distinctly apiculate, margins laxly to subdensely spinose, spines 1.5–3 × 1 mm, narrowly triangular, strongly antrorse-uncinate, 5–15 mm apart. **Peduncle** ca. 2 cm long, ca. 1.1 cm in diameter, glabrous, white; peduncle bracts broadly ovate, acute and distinctly apiculate, spinulose at the apex, sparsely and inconspicuously white lepidote, nerved, whitish, the upper ones involucral, 2.5–3.5 × 2–2.5 cm, acute and slenderly apiculate, slightly exceeding the ovary. **Inflorescence** globose-capitate, simple, subcorymbose, sunk in the center of the rosette, ca. 4.3 cm long (excluding the petals), 5.5–6 cm in diameter at the apex, densely flowered, apex nearly flat; floral bracts the outer ones resembling the involucral bracts but narrower, the inner ones sublinear-lanceolate to linear, cymbiform, ecarinate, apex acute, cucullate and shortly apiculate, entire, sparsely and inconspicuously white lepidote to glabrous, thin in texture, nerved, green except for the vinose apex, 27–33 × 5–10 mm, up to equaling the middle of the sepals. **Flowers** ca. 80 in number, 45–46 mm long (with extended petals), slightly fragrant, pedicels 6–8 × 1.5 mm (inner ones) to ca. 15 × 2 mm (outer ones), subterete (inner ones) to slightly complanate but not at all dilated toward the base (outer ones), white, sparsely

Figure 1. Type plant of *Neoregelia watersiana* (Leme et al. 8045) flowering in cultivation. This plant was grown in shade. 2A. The inset in the lower right corner shows the flowers in greeater detail. Photos by Elton Leme.

Figure 2. Another cultivated plant of *Neoregelia watersiana*, this one grown in strong light and showing much more red color. Photo by Peter Waters.

and inconspicuously lepidote; sepals narrowly lanceolate, acuminate and slenderly caudate, asymmetric with the inconspicuous wing distinctly shorter than the midnerve, ca. 19 × 6 mm, connate at the base for 1.5–2 mm, entire, ecarinate, green toward the apex and reddish at the base, thin in texture, glabrous; petals lanceolate, acuminate, ca. 26 × 5 mm, connate at the base for ca. 7 mm, spreading at anthesis, white except for the pale green portion slightly above the anthers and the purple apical margins and apex (Fig. 2), bearing 2 longitudinal callosities nearly equaling the anthers; filaments, the antepetalous ones adnate to the petals for ca. 9 mm, the antesepalous ones adnate to the petal tube and free above it; anthers ovate, ca. 2.5 mm long, fixed at 1/4 of their length above the base, base obtusely bilobed, apex acute; stigma conduplicate-spiral, subcylindrical, white, ca. 5 mm long; ovary oblong-ellipsoid, ca. 10 × 5 mm, terete, white except for the green apex, glabrous; epigynous tube inconspicuous; ovules many, obtuse; placentation apical. Fruits unknown.

Neoregelia watersiana is closely related to *N. kautskyi* but differs from it by the comparatively longer leaf blades, with longer marginal spines, inflorescence with more numerous flowers, floral bracts reaching up to the middle of the sepals, and by the shorter petals, which are white except for the pale green portion slightly above the anthers and the purple apical margins and apex. On the other hand, it can be compared to *N. gavionensis*, also differing by the wider leaf blades, with laxly to subdensely spinose margins, and flowers with comparatively shorter pedicels.

Figure 3. Peter Waters examining the new *Neoregelia* species during the Brazilian expedition. Photo by Jeanette Waters.

Despite not being so morphologically similar, *N. watersiana* is somewhat related to *N. coriacea*, but is distinguishable by its narrower leaf blades, sepals shortly connate at the base, and by petals shortly connate at the base and white except for the pale green portion slightly above the anthers and the purple apical margins and apex.

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[Editor's note: The name of *N. watersiana* honors one of its collectors, Peter Waters from New Zealand, bromeliad specialist, New Zealand director and Honorary Trustee of the Bromeliad Society International (Fig. 3). It is also the first bromeliad to be named in honor of a New Zealander. A well-deserved recognition of Peter's decades long commitment to advancing the study of bromeliads. An earlier version of this article was published in Bromeliad: Journal of the New Zealand Bromeliad Society.]

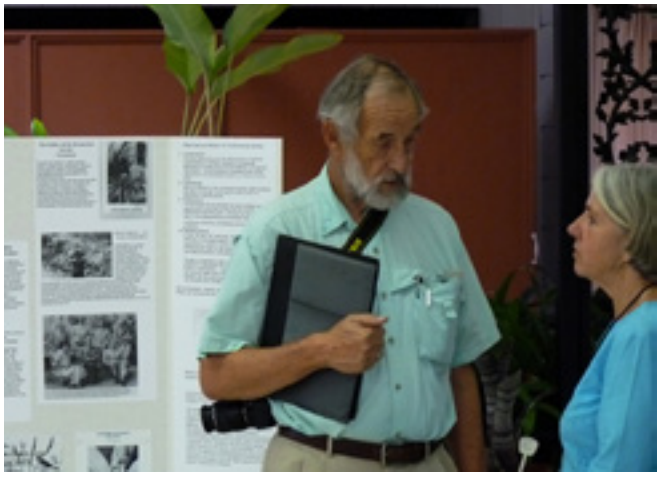
Figure 4. Terrain with steep rock slopes is common in Desengano State Park. Photo by Peter Waters.

Figure 5. Summit of Morumbeca, Desengano State Park. Photo by Peter Waters.

Local Bromeliad Society Joins Garden Club In 85th Anniversary Celebration

Jay Thurrott

Many of the bromeliad societies in Florida have strong connections with local garden clubs (in addition to being BSI affiliates) and frequently provide both monetary and physical support to those organizations. Recently the Seminole Bromeliad and Tropical Plant Society participated in the Garden Club of Sanford's 85th anniversary celebration by providing an educational display profiling some of the 19th and 20th century bromeliad pioneers who called central Florida home. Examples were provided of some of the plants and hybrids associated with these historic figures, including Mulford and Racine Foster, Theodore Mead, Henry Nehrling, Julian Nally, O.C. Van Hyning and Edgar W. Ensign. Advance publicity brought in an interested public as well as potential new club members for both the bromeliad club and the garden club. Refreshments were served to the public and bromeliads were available for sale. This was an excellent example of how local bromeliad clubs can play a role in their community by providing a fun and educational event that the whole family can enjoy.



BSI board member Steve Provost talking with display organizer Barbara Whittier. Photo by Jay Thurrott.

Plants were on display that had a connection to"bromeliad pioneers". This plant is a direct descendant of the *Aechmea* 'Foster's Favorite' (not *Aechmea* 'Foster's Favorite Favorite') that was given to Barbara Whittier by Mulford Foster. Photo by Jay Thurrott.

Return to Panama - Part 1

Bruce Dunstan

This July (2013) saw me head back to Panama to travel with Carla Black, Angel Rodriguez and Bill Fitz. Carla was keen to find *Heliconia darienensis* in the wild for her Mesoamerican *Heliconia* project. Angel and Bill were keen to come along to take a walk in the forest and find some different bromeliads in Bill's case. Me? I just needed an excuse to get back into the forest and heading to some remote parts of Panama was pretty enticing.

We started in Panama City with Carla and Bill picking me up from the airport after the usual 20 odd hours flying that it takes to get from Australia. We had a quick bite to eat and a couple of beers at a loud cowboy bar on the Interamerican Highway near the airport, across from and Bill's and my lodgings for the evening.

Bright and early we set off east towards the Colombian border and the famous Darien Province, home to paramilitary guerrillas, drug runners and worse if you believe everything written about the place. After 3 or so hours drive we encountered our first checkpoint and gave the military police our details, our letters of permission and our itinerary. Once this was sorted we were off to Puerto Kimba not far off the highway where we jumped on a fast water taxi and headed to La Palma. It's a nice town that can only be reached by plane or boat along the Rio Tuira, a massive river that combines a

Figure 1. The view to Cerro Sapo from the airstrip in Garachine. We climbed the peak just to the right of the real summit. Photo by Bruce Dunstan,

[Editor's Note: A previous version of this article was published in Bromeliaceae volume 47 4th Quarter 2013 and volume 48 1st Quarter 2014.]

Figure 2. The view to the Serrania Jungurudo from the Rio Sambu. Photo by Bruce Dunstan.

few others that flow down from the slopes of the tall ranges that cross the border with Colombia and drain the centre of eastern Darien Province.

We were headed to Cerro Sapo (Fig. 1), a solitary mountain out on the Pacific coast that rises from sea level to 1100 m. It starts a range of mountains that run along the Pacific coast of Panama reaching the Serrania de Jungurudo (Fig. 2), with peaks to 1300 m, near the Colombian border. As you head across the isthmus at the border you then get to Cerro Pirre (1550 m) then further towards the Caribbean side Cerro Tacarcuna rises to 1875 m as the highest peak. These mountains are very difficult to access currently as the Panamanian Military Police are not allowing people to move around outside the small towns let alone travel to them in this remote part of the province.

To reach Cerro Sapo we needed to catch a boat from La Palma and travel to Garachine out close to the Pacific coast, a 4 hour trip by motorised dugout canoe, but there are faster water taxis that make the trip 3 days a week. To leave La Palma we needed to check in again with the Panamanian Military Police, the 'Fronterizo', to hand over our paperwork again and get their approval for movement. The base at La Palma had some very fast, large speed boats that carried a dozen or so armed police, no doubt to keep an eye on water traffic so close to the border. We waited the next morning from 6:00 a.m. for our boat and guides to arrive. 3 hours later, just after 9:00, they paddled into town having run out of fuel and spent the 3 hours paddling against the river flow. We fueled up and loaded our bags and set off for Garachine.

On headlands of Punta Alegre, along the way, we spotted *Pitcairnia haliophylla* growing on the exposed rocks just above the high tide line as well as huge flowering

Figure 3. Bill Fitz, Carla Black and Angel Rodriguez at the Fronterizo building in Garachine, waiting for paperwork to be scrutinised. Photo by Bruce Dunstan.

clumps of *Tillandsia flexuosa*. As we rounded the point we could see, in the distance, Cerro Sapo swathed in cloud against the horizon. After 4 hours of riding in the dugout canoe it was great to finally get back onto dry land in Garachine, then another quick trip to the local Fronterizo outpost (Fig. 3), where a guy who obviously couldn't read inspected all our paperwork for the next 20 minutes, no doubt a novelty in out-of-the-way Garachine. We set off through the streets looking for lunch but the late start meant the local restaurants had nothing to offer and were closed. Other plans were hastily hatched so we could get something solid into us as we still had to complete a 4 hour walk to our lodgings before it got dark. Our bags were loaded onto horses and off we headed on what was a largely flat track to start with, lined with lowland *Heliconia mariae*, *H. latispatha* and *H. platystachys*. As we left the cleared farm areas we started to climb and then head down some of the low rolling hills in nice lowland forest. Along the path large *Werauhia sanguinolenta* grew in the trees and large clumps of the tall *Bromelia karatas* (Fig. 4) were also spotted. Being lowland meant it was hot and very humid but thankfully the sun was going down and it was starting to get dark. We still had another hour's walk by torchlight in the dark forest to complete to get to where we were staying on the Pacific coast (Fig. 5), Casa Vieja, the 'old house', arriving just on sunset.

Figure 4. *Bromelia karatas* growing at sea level around Garachine to Casa Vieja. Photo by Bruce Dunstan.

Figure 5. The view from Casa Vieja looking out to the Pacific Ocean. Photo by Bruce Dunstan.

The next day we headed towards Cerro Sapo on a scouting mission. Our local guide, an Embara man, took us along a trail that went up the mountain. Three years ago a butterfly scientist had camped up on the mountain surveying the local wildlife. We followed this trail behind our Machetero; he swung hard on his machete to make the trail wide enough to walk along and at the same time make it clear enough for us

Figure 6. *Tillandsia kegeliana* halfway up Cerro Sapo. Photo by Bruce Dunstan.

to return along it. Sadly we saw very few bromeliads in lower elevations due to the forest being seasonally dry. This also applied to other interesting plants so made for a very plain green forest. We reached the Mariposa Man's (AKA butterfly scientist's), base camp towards lunchtime, and were greeted with a pair of his pants draped from one of the small trees next to where he camped. Lunch today was fried batter or local bread and some dried venison of some local forest deer. As we got higher we started to see some plants of *Tillandsia kegeliana* (Fig. 6) that had fallen out of the tree canopy above. At this stage we decided that it would be best to turn around and have another go tomorrow leaving much earlier in an attempt to reach the summit.

I joked with Carla and Bill that the only way to explain what we were doing was to say it would be like getting on a Stairmaster, in rubber boots, in a sauna and getting someone to throw biting ants and spider webs at you as you go hard for hours on end.

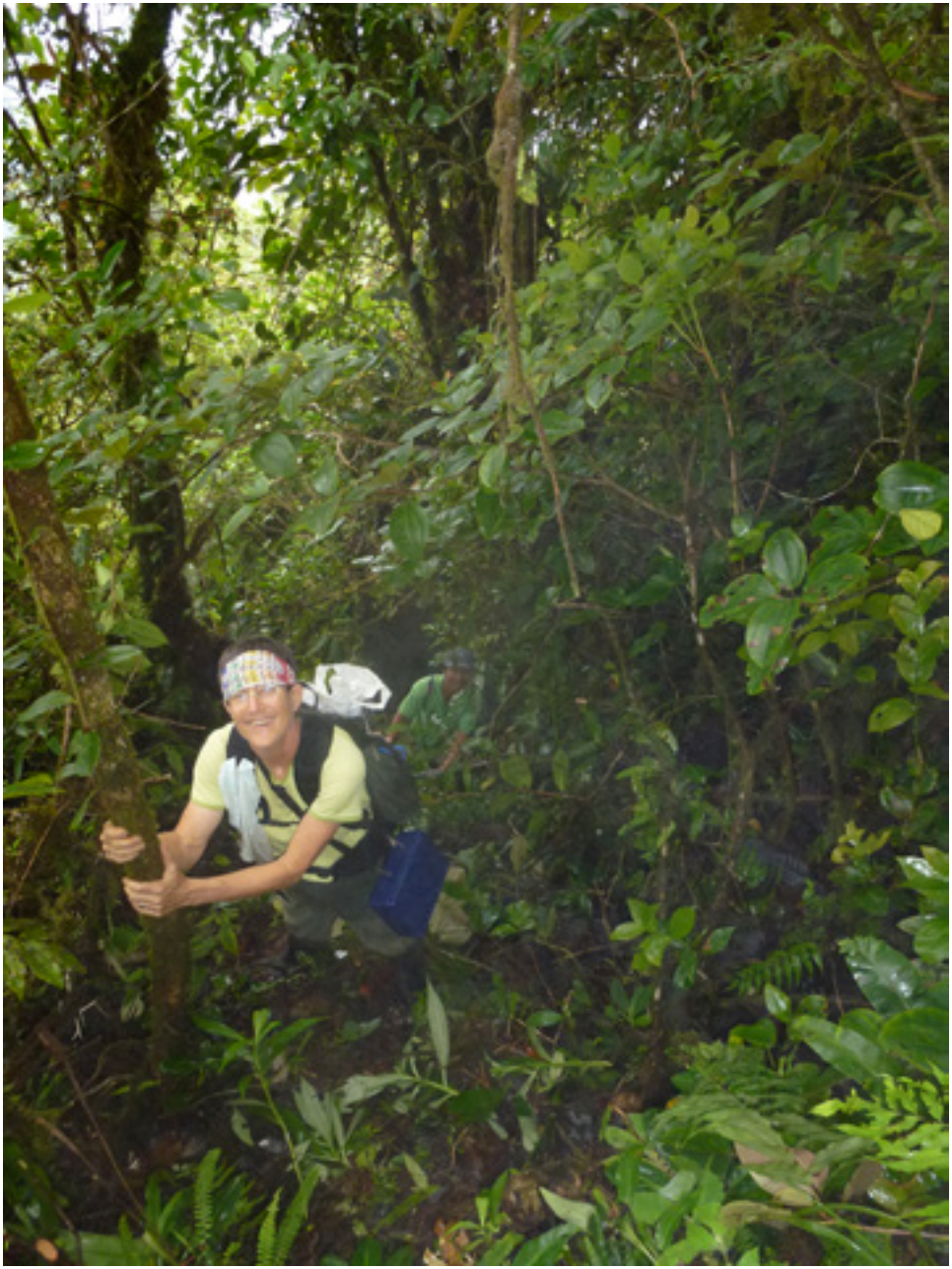


Figure 7. Carla Black heading towards the higher elevations of Cerro Sapo. Photo by Bruce Dunstan.

Needless to say we were glad to get back to Casa Vieja that afternoon after 9 hours walking and roll around in the creek to wash off the mud and sweat.

We got up at 3:50 a.m. the next morning for a 4:30 start. After a breakfast of some tough chicken stew and some fried rice tortillas that I just couldn't get down, we were almost ready. I needed some painkillers to get started as my feet had suffered on yesterday's descent, with my toes being pushed forward into my boots. Panadol for breakfast is usually a sign that things haven't gone so well rather than a sign of good things happening in the future, but there was a mountain to climb. Bill decided he would rather spend the day at Casa Viejo with Angel, enjoying the view through the coconuts of the wild coastline and the regular sightings of migrating humpback whales, while we headed back up Cerro Sapo in search of *Heliconia darienensis* and bromeliads that had never seen the light of day, ha-ha. By torchlight, following our Embara Machetero, we set off.

Walking in the forest reminded me of two things Angel has told me over our years of shared travel: 'Nothing good happens in the forest at night' and 'never put your hands where you can't see them'. Sage advice to ponder as we marched through the lower elevations in the dark with just our torches for light. A quick stop as we saw a good sized Fer de Lance lying alongside the path, no doubt hunting for rodents in the pre-dawn twilight of the dark forest. We reached the Mariposa Man's base camp at 8:30 a.m. so were well on track. As we went higher, the steeper and more overgrown it became (Fig. 7). The clouds that we'd seen from a distance while travelling to Garachine were starting to change the species we were seeing as we got higher - with more moisture there were more epiphytes. There were many species of anthuriums, orchids, gesneriads and more bromeliads. *Guzmania butcheri*, a small reddish plant, became common along with *Tillandsia kegeliana* and *Tillandsia monodelpha*. We noticed *Araeococcus pectinatus* hanging from the trees. It took closer inspection from Carla to find the spines on the lower foliage for us to work out what we were looking at; flowers a little further up the hill confirmed it. As we climbed we could see out of the forest when we got to clearings along the ridge and through the cloud we noticed a peak well above us and a couple of hundred meters further away from where we were. The trail our machetero was taking us up was on one of the slightly lower peaks on Cerro Sapo. We were then climbing hand over hand up rocks, vines and lianas for an hour or so as we were entering elfin cloud forest closer to the higher ridges. Everything was shrouded in moss, ferns and incredibly wet. We reached the peak and were greeted by the Mariposa Man's upper campsite, complete with his cooking pots, gas stove, sleeping roll, butterfly nets and extension poles. He had obviously got the local Embara men to help carry everything up to this high camp site 3 years ago and then walked down leaving everything including his pants at the lower camp. What a disgrace! If he had even told the locals he had left things behind I'm sure they could have used some of the waste. Our guide took the cooking pots with him on the return trip, once he'd removed all the stinging black ants that had colonised them for the past few years, as well as the aluminium extension poles. These proved a god send on the downhill descent.

Figure 8. The real peak of Cerro Sapo. Just out of reach for us. Photo by Bruce Dunstan.

We stopped there realising for us to get to the peak we would still need to head down and then across another ridge and then the final climb up to the actual peak (Fig. 8). It was 12:30 p.m. and 8 hours walking and climbing by now so the thought of more climbing was enough for Carla and I to decide we had come far enough today, after all we still had to climb down before dark. While we stopped for lunch I headed down the other side and noticed the plants changed as soon as I had dropped over the ridge. *Guzmania darienensis* covered every small tree (Fig. 9) and what looked like many *Pitcairnia arcuata*, with huge petiolate leaves to more than 1 m, were growing as an understorey. I happily collected *Guzmania* seed as the bulk of the plants were well past their flowering peak and were full of maturing seedpods. We had obviously come up the dry side of the mountain and were only seeing some of the diversity that actually grew on the mountain.

We didn't see *Heliconia darienensis* on the mountain, just an isolated clump of *H. latispatha* well above the lowland colonies, no doubt deposited by a passing bird. We did collect a plant of what appeared to be *H. longiflora* growing about 2/3 the way up the hill. When and if it flowers in cultivation we can confirm its identity.

After lunch we started to think about our descent, this time climbing down over all the moss covered rocks, vines and lianas. The long aluminium poles were a great

Figure 9. *Guzmania darienensis* along the wet ridge near the top of Cerro Sapo. Photo by Bruce Dunstan.

help as we could find somewhere firm to place them and work our way down the steep incline. Having a different view, now from above, of the plants growing in the low stunted trees, allowed us to spot some other nice plants including what I believe may be *Werauhia graminifolia*, a small thin-leafed purplish plant originally described from Costa Rica and also collected in Guatemala. Luckily for me it had seedpods as well. With all the downhill climbing I found my feet were suffering more than yesterday as my toes were being forced into the front of my tight fitting boots. This resulted in blood blisters under a couple of toenails on both feet. We stopped at creeks and regularly sterilized water with a steri pen that uses UV light as a way of killing off any nasty bugs or parasites. While we were sitting in one creek our guide pointed and shouted El Tigrillo! 'The Tiger', a young jaguar that hadn't seen or heard us due to the roaring water flow, came down to either drink from the creek or cross. Hearing our guide the jaguar quickly turned around and sprinted back into the forest. I was struck by how thick through the chest and shoulders the cat was and how powerful it looked, bounding back up through the rocks and into the foliage. We read up about them later and it was no surprise that jaguars kill their prey with powerful bites to the skull.

The remote location explained why we were able to see such amazing wildlife on

the trip. We ended up getting back to Casa Vieja at 3:30 in the afternoon, exhausted from the day's adventure and once again the creek was a perfect spot to roll around in, cool off and get clean. As we sat down for a few rums that evening the thought of walking for another 4 hours to get back to Garachine the next morning was something I wasn't looking forward to at all.

The walk out the next day was punishing. Once again I was taking painkillers for breakfast as we headed off in very still, humid conditions. With aching feet and a need to keep moving to create some air flow over me, we pressed on in stifling humidity.

Bill and I found we were stopping regularly to treat water at the numerous creek crossings. Getting closer to Garachine, as the morning warmed up, we walked out of the forest into the sun. The local store was first stop on reaching town to buy a cold drink that didn't need a steri pen before drinking. Since we were in town at a reasonable time of day this time we were able to go to a local restaurant and have a great meal although the ambience lacked a little as the restaurant was just across the road from the town generator, a roaring diesel.

After our final meal in Garachine, we had to wait an hour or so for the tide to come in to allow our dugout enough water to get out through the mangrove creek and begin the return journey back to La Palma and onto Puerto Kimba. We left Angel and Bill in La Chunga, the village along the Rio Sambu where our guides lived. They told us they had FARC guerrillas come and stay at their village 3 years ago during the dry season. These days they have visitors from a cruise liner come in once a month so 'times are a changing'. I was keen to gain some elevation, as the lowland forest wasn't likely to contain anything I was looking for. Carla and I headed back up the highway and out of the province. This meant another stop with the military police and another 10 minute wait while they checked out our paperwork and us to see if we looked nervous or potentially guilty. Once we had convinced them that we were just deranged plant nuts we were free to keep travelling.

A new epilithic *Tillandsia* from Central Bolivia: *T. lechneri*

Walter Till[1] and *Michael H. J. Barfuss*[1]

During a botanical field trip through Bolivia in September 2007, Peter Lechner from Vienna observed clumps of a *Tillandsia* growing nearly inaccessibly on a rock wall at Los Negros between Samaipata and Mataral in Cochabamba department. The plant was only photographed (Fig. 1). In spring 2009 he visited the locality again and after several attempts a small clump could be collected which showed the plant in fruit. In this state a reliable identification was not possible and therefore the infructescence was prepared for the herbarium while the corresponding clone was brought into cultivation in Vienna, Austria, where it flowered in the following year. The developing inflorescence (Fig. 2) strongly reminded us of *Tillandsia lotteae* H. Hrom. ex Rauh but the rather soft leaves made us hesitant to identify it as this species. At full bloom the white corolla (Fig. 3) and the pleasant flower scent placed the plant in question much nearer to *T. xiphioides* Ker-Gawl. However, it was different from all known populations of this species which is widespread from South-central Bolivia to Central Argentina and Uruguay. We also took into consideration that it could be a natural hybrid of both mentioned species albeit the supposed parent taxa have not been observed in the area of our new species. To exclude this option and to get an estimate of their phylogenetic relationships we sequenced

Figure 1. Fruiting *T. lechneri* at the type locality, 24 September 2007. Photo by P. Lechner

Figure 2. Clump of rosettes starting to bloom in cultivation in 2010. Photo by P. Lechner

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Figure 3. *T. lechneri* at bloom in February 2010, note the wide, green floral bracts and white, crenulate petals. Photo by P. Lechner.

two plastid markers (matK, ycf1) and one nuclear locus (PHYC) for the Los Negros plant (sample 808: leaves from the flowering clone, and sample 809: seeds from the infructescence) and compared the sequence with that of *T. lotteae* and *T. xiphioides*. Several partly closely, partly distantly related taxa served as an outgroup. Aligned DNA matrices were analysed using the maximum likelihood (ML) approach implemented in the GUI version (Silvestro & Michalak, 2012) of the program RAxML (Stamatakis et al., 2005).

A ML phylogram with ML bootstrap values is given in Figure 4. Although the target taxa are closely related, the sequence differences are of the same degree as in other alliances of accepted species. Most important, from the sequence structure we can conclude that the Los Negros plants do not represent a recent primary hybrid (although an ancient hybridization might have been involved in the evolution of the population). We therefore propose it as a new species.

Tillandsia lechneri W. Till & Barfuss, sp. nov.

This new species differs from *Tillandsia xiphioides* Ker-Gawl. (1816) by the broader green (18 mm vs. 14 mm and stramineous) floral bracts, the broadly acute (vs. acuminate), shorter sepals (ca. 30 mm vs. ca. 40 mm), the shorter petals (6

cm vs. 7-9 cm) and the pistil being included (vs. slightly exserted) in the corolla; from *T. lotteae* H. Hrom. ex Rauh (Rauh, 1978) it differs in being nearly stemless (vs. caulescent), the soft leaves (vs. rigid), the longer pure green (vs. yellow-green) floral bracts which are chartaceous when dry and with broad hyaline margins (vs. without broad hyaline margins), the sepals being much shorter than the floral bracts (10-15 mm shorter vs. subequaling), the fragrant (vs. odourless) flowers and the longer (6 cm vs. 5.5 cm) white (vs. yellow) petals which are much wider (16 mm vs. 6 mm) apically.

Plants saxicolous, with very short stems, forming clusters. **Leaves** densely rosulate, rather soft, yellowish grey-green, densely pale pruinose-lepidote on both surfaces, spreading and somewhat recurved; leaf-sheaths not distinct from the leaf-blades, densely lepidote except at the very base adaxially; leaf blades narrowly triangular, 9 – 13 cm long, 1.3 – 1.5 cm wide at the base, margins slightly involute at the base becoming canaliculate towards the apex. **Peduncle** 3 – 4 cm long, ca. 4 mm in diameter, densely covered by the peduncle bracts; peduncle bracts 3 – 4 cm long, elliptic, apiculate, glabrous, green and smooth when fresh becoming straw-colored, chartaceous and slightly nerved when dry. **Inflorescence** simple, densely distichously 8 – 12-flowered, 10 – 12 cm long and ca. 2.5 cm wide. **Flowers** 5 – 5.5 cm long, pleasantly fragrant, sessile; floral bracts like the

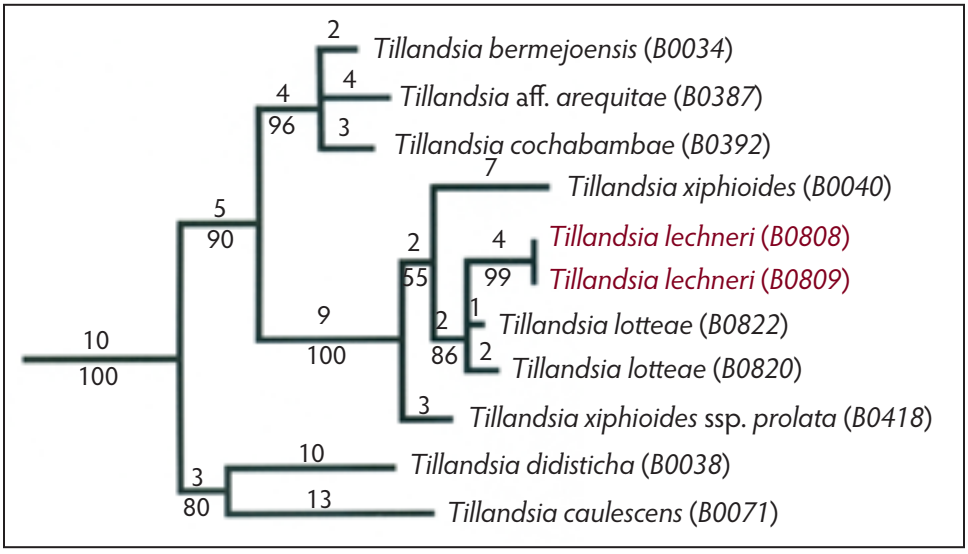

Figure 4. Maximum likelihood phylogram containing *T. lechneri* and its relatives *T. lotteae* and *T. xiphioides*. The remaining *Tillandsia* taxa served as outgroups. Branch length (supporting DNA characters) is given above and ML bootstrap values are given below the branches. DNA voucher numbers are given in parenthesis after the species names.

peduncle bracts but somewhat larger, 4 – 4.5 cm long, ca. 1.8 cm wide at the middle, elliptic, broadly acute, ecarinate, glabrous, chartaceous when dry and with broad hyaline margins, distinctly longer than the sepals. **Sepals** chartaceous, glabrous, nerved in the central part when dry and with broad hyaline margins, broadly acute, (2.6-) 2.8 – 3.1 (-3.3) cm long, (6.5-) 7 – 8 (-10) mm wide, free, the abaxial ones ecarinate, the adaxial ones obtusely subcarinate. **Petals** white, ca. 6 cm long, 1.6 cm wide distally, apical margins crenulate. **Stamens** ca. 4.5 cm long, filaments white, linear, not plicate, 37 mm long, anthers pale yellow, 9 mm long, linear, subbasifixed. **Gynoeceum** whitish, 42 mm long; stigma 2 mm long, reaching the middle of the anthers, of the simple-erect type, lobes somewhat spreading, with undulate margins and minute papillae-like projections; style 35 mm long, ovary slenderly conical, 5 mm long; ovules slenderly obconical, with a very short obtuse chalazal appendage about one fourth the length of the ovule proper. **Capsule** ca. 3.2 cm long, dull straw-colored outside when dry, dark castaneous and lustrous inside, with a short beak; seeds fusiform, with a 1 cm long straw-colored pseudopappus bearing divergent rays on both ends, chalazal appendage very short and undivided.

Type: Bolivia, Depto. Santa Cruz, Prov. Florida, carretera de Santa Cruz a Cochabamba, entre Samaipata y Mataral, 6 kms al este de Los Negros, ca. 1220 m s. n. m., 18°00‘56“N, 64°05‘58“W, 18 de mayo de 2009, leg. P. Lechner 20-451, sobre rocas en el lado del río; flores fragrantes; floreció en cultivo el 15 de mayo de 2010 sub B09/2-1, holotype: LPB; isotype: WU 0072992 (= DNA voucher *B0808*); Depto. Santa Cruz, Prov. Florida, along the road from Santa Cruz to Cochabamba, between Samaipata and Mataral, 6 km east of Los Negros, ca. 1220 m a. s. l., 18°00‘56“N, 64°05‘58“W, 18. 5. 2009, leg. P. Lechner 20.451, epilithic on rock wall at the river, paratype: WU 0072993 (= DNA voucher *B0809*).

The plant is named after O. Univ.-Prof. Dipl. Ing. Dr. Peter Lechner, emeritus of the Agricultural University in Vienna, Austria, who brought this interesting plant to our attention and enabled our investigation of living material.

Tillandsia xiphioides is widespread in southwestern South America extending towards the north to the vicinity of Cochabamba at elevations usually above 1500 m a. s. l. At the eastern margin of the south Bolivian Andes the white flowering populations are replaced by the yellow flowering *T. xiphioides* var. *lutea* L. Hrom. (Hromadnik, 1990) at elevations between 900 and 1400 m a. s. l. In contrast to Argentina where it prevailingly grows as an epiphyte, in Bolivia numerous epilithic populations occur with a considerable interpopulational variation. However, despite of this variation, there is no population matching the inflorescence and flower characteristics of *T. lechneri*.

The Bolivian endemic *T. lotteae* is known from La Viña in Cochabamba department to El Puente in Tarija department at elevations from 1300 to 2900 m a. s. l., only rarely it is found at lower elevations. It grows epilithically in the dry valleys running north to south from Cochabamba via Sucre to Tarija.

T. lechneri is quite remote to the northeast from the nearest populations of *T. lotteae* and even more from *T. xiphioides*. Considering this geographic isolation, the morphological differences, and the genetic data these plants as a separate species is appropriate.

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ANNOUNCEMENT

Michael Rothenberg informs us that he has discovered 50 copies of Leon Duval's 'The Bromeliads' in storage while preparing to move to a new house. If anyone is interested in obtaining a copy, they can contact him at the following: Michael Rothenberg, Box 870, Guerneville, Ca 95446 or by phone at 305/753-4569. Sorry, no email is available.

Figure 5. *T. xiphioides* var. *minor* (W. Till 5219) collected in Argentina, Prov. Córdoba, Cumbre de Achalá, 1600 m, growing on rocks). This plant has a short peduncle and flower petals very similar to that of *T. lechneri*, but differs greatly in the color and shape of the floral bracts and the low number of flowers in the inflorescence. Photo by Walter Till.

Vriesea erythrodactylon - Size is not everything

Derek Butcher

This article was prompted by me investigating *Vriesea* 'Waggoner' which was coined some 20 years ago for a *Vriesea erythrodactylon* with an extra-long spike. The plant had been collected in the wild by Georgia Waggoner. It was marketed by Tropiflora and the name appears in The Bromeliad Cultivar Register. *Vriesea erythrodactylon* is still marketed by Tropiflora and they have a range of length of floral spikes but 'Waggoner' is not used. Does 'Waggoner' still exist?

Well, I saw a *Vriesea erythrodactylon* with an extra-long spike that Chris Larson brought to the Adelaide Bromeliad Show in Feb this year. The spike was 50 cm long! This started the cogs turning.

So I contacted Chris Larson who said he had got his plant from Kerry Tate in northern NSW who in turn got her plant from Olive Trevor in Queensland, who said Shane Zaghini had imported it from Wally Berg in Florida, USA, who in turn had collected it in the wild in Brazil. Olive told Kerry it was a superior clone of *V. erythrodactylon*, with the unregistered nursery name of 'Vista'. *Vriesea* 'Vista' was registered in the 1990's for a *V. fosteriana* cultivar, so here we have an unregistered homonym . Michael's Bromeliads catalogue for 2008 shows *V. erythrodactylon* (large form), *V. erythrodactylon* (select), and *V. erythrodactylon* (variegated). So it is difficult to know where the name 'Vista' came from. The 'large form' links to what we believe to be 'Waggoner' and 'select' to the true species. The variegated form was named 'White Cloud' and registered in 2005. When at Michael's nursery in 2010, Kerry photographed some of his *V. erythrodactylon* plants in bloom. The photo clearly shows an elongated spike but no tell-tale black tips to the leaves nor black leaf sheaths which are part of the 'official' description of the species in Flora Neotropica (1977) - See photo by Oscar Ribeiro from Rio de Janeiro, of what to expect. However if we look at *V. erythrodactylon* var. *rubropunctata* named in 1981 by Pereira and Moutinho we see that has totally green leaf sheaths. And if we look at the herbarium specimen for this variety we see a short inflorescence.

Back to the plant in question which differs from the type species by having a floral spike 50 cm long inflorescence (not 10-23cm long), leaf sheaths totally green and without a black tip to the leaf blade. To me this is sufficient to give this plant a cultivar name and not treat it as just another *V. erythrodactylon*. But what do we call it? There is already a name for a *V. erythrodactylon* with an elongated spike in 'Waggoner'. We know this can be traced to Brazil and this can be amended in the Bromeliad Cultivar Register to include data on the leaf structure. Michael Kiehl reveals that some of his larger form with no black on the leaves, which has the extra-

long inflorescence came from Herb Hill, Jr. Herb Hill, in turn, advises he got stock from Reginald Deroose as well as obtaining several clones from Brazil. How each of these clones varied we do not know. Michael Kiehl also has record of having got stock from Chester Skotak who advises his plants came from a clump near Kautsky's hill many years ago and he has always doubted that they were in fact *V. erythrodactylon*. It is also reported that Wally Berg made collections in the wild in Brazil. We know very little about differences in these clones and very little data as to where they were actually found in the wild. With so much of an exodus, over the years, from Brazil of plants that look like *V. erythrodactylon* with an extra long spike it is strange that Elton Leme is unaware of this in the wild. Could it be an undescribed new species? Could it be a Brazilian nursery creation? It also seems strange that the registered name of 'Waggoner' was used for a short period by Tropiflora although by 2013 they no longer have this clone under this name.

As a side issue, Uwe Scharf has revealed that a *Vriesea erythrodactylon* with the dark leaf sheaths and dark tipped leaf blade but with an inflorescence much exceeding the quoted 23 cm is growing in Germany.

Oscar Ribeiro has 'our' plant growing in his nursery in Rio de Janeiro and it is more widespread than I first thought when I started asking questions.

Nobody has looked at it botanically and growers have ignored the entry in the BCR. We intend to add to the BCR entry that 'Waggoner' has totally green leaves and thus is very different to the described type species of *V. erythrodactylon*. There appears to be slight variation in floral bract colour (but no spotting as quoted for the variety *rubropunctata*) depending on growing conditions and clones so colour is not mentioned in our description of 'Waggoner'. We hope that the use of this name will start to appear in plant Societies, Ebay and plant nursery circles.

We must not forget the variegated form which was given the name 'White Cloud'. We noticed that this variegated form is referred to as 'Waggoner' in Hawaii and yet our investigations in 2005 revealed no link with Georgia Waggoner, and does cause confusion.

We can only urge growers and nurserymen to refer to the Bromeliad Cultivar Register to find recorded history on so many of our plant names that have emerged from horticulture.

Figure 1. Clone of *Vriesea erythrodactylon* with a long inflorescence, lacking stolons and dark markings on the leaves. Plant originally collected by Herb Hill, Jr. in Brazil. Photo by Peter Tristram.

Figure 2. Clone of *Vriesea erythrodactylon* with stolons, a short inflorescence, dark leaf sheaths and dark leaf tip. Plant from Herb Hill, Jr. whose records indicate it came originally from the Mulford Foster collection. Photo by Alan Herndon.

Reactions and implications of *Tillandsia* x *florida* seed *in vitro*

Michael Dorris

Tillandsia X *florida* is regarded as synonymous with *T. fasciculata* var. *floridana*, a hybrid of *T. bartramii* and *T. fasciculata* var. *densipica* (Luther & Benzing 2009). The seeds used in this experiment were from a plant found on private land in S.E. Hillsborough County, in West Central Florida.

The seed capsules were sterilized Oct. 11 2012 for 30 minutes with 10% v/v bleach and placed on EXS III (E337) from Phytotechnology laboratories. "EXS III is a proprietary plant cell culture medium that was originally developed for the culture of foliage plants". Quoirin & Lepoivre Basal salt mixture (Q673) a somewhat similar medium was used for comparison. Six (6) grams of agar/liter were added as a gelling agent, thirty (30) grams/liter of sucrose were added and the Ph was set at 5.8. No hormones were added. Observations were taken Feb. 14 2013.

A total of 371 germinated seedlings were observed; no un-germinated seed were seen but could have existed. At the time of observation 58 seedlings (15.6%) were differentiated into plants, the rest were in various stages of development with a profusion of undifferentiated tissue (callus) and hyperhydricity (an osmotic water imbalance) was common.

Most *Tillandsia* species are bark and twig epiphytes, so are unlikely to receive a great deal of nutritive elements in their native environment. When exposed to vastly more nutrients, as in this study, there can be irregular growth. Osmotic pressure, a measure of medium density compared to the plant cell cytoplasmic density, is crucial; either too much or too little can result in excessive cell (callus) growth depending on the nature of the plant. Plants differ in their reactions to the growing conditions. Some plants (heavy feeders) can use all nutrients provided by a rich medium where a light feeder is overwhelmed. In the latter case,

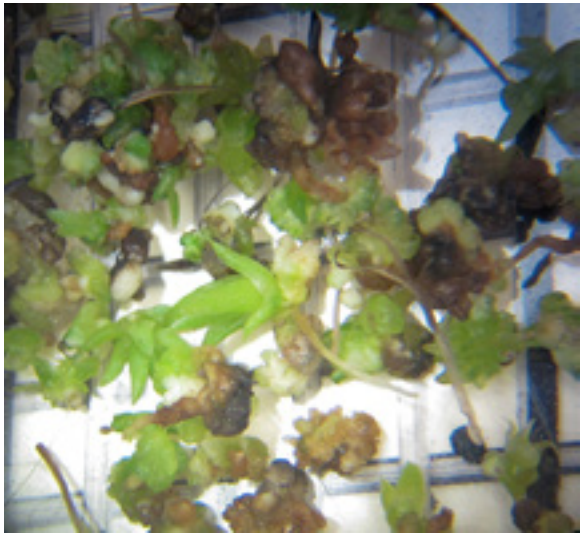

Figure 1. Germinated seeds on growth medium. Many have produced undifferentiated masses of callus, but some have produced normal appearing seedlings. Photo by Michael Dorris.

with imbalances of water and nutrients, irregular growth occurs, producing callus and hyperhydricity.

When callus is seen, the media can be modified to maximize the proportion of seeds producing normal seedlings. Amounts of nutrients and/or gelling agents can be enriched or reduced. For example the same salts and sugar but different amounts of gelling agents can be added to different batches of media and the results observed (George, E., Hall, M., De Klerk, Greert-Jan. 2008). So the above medium can be manipulated to favor normal seedlings of *Tillandsia* x *florida*, but that can only go so far.

Here is the wrinkle, genes control regulation of growth substances that influence

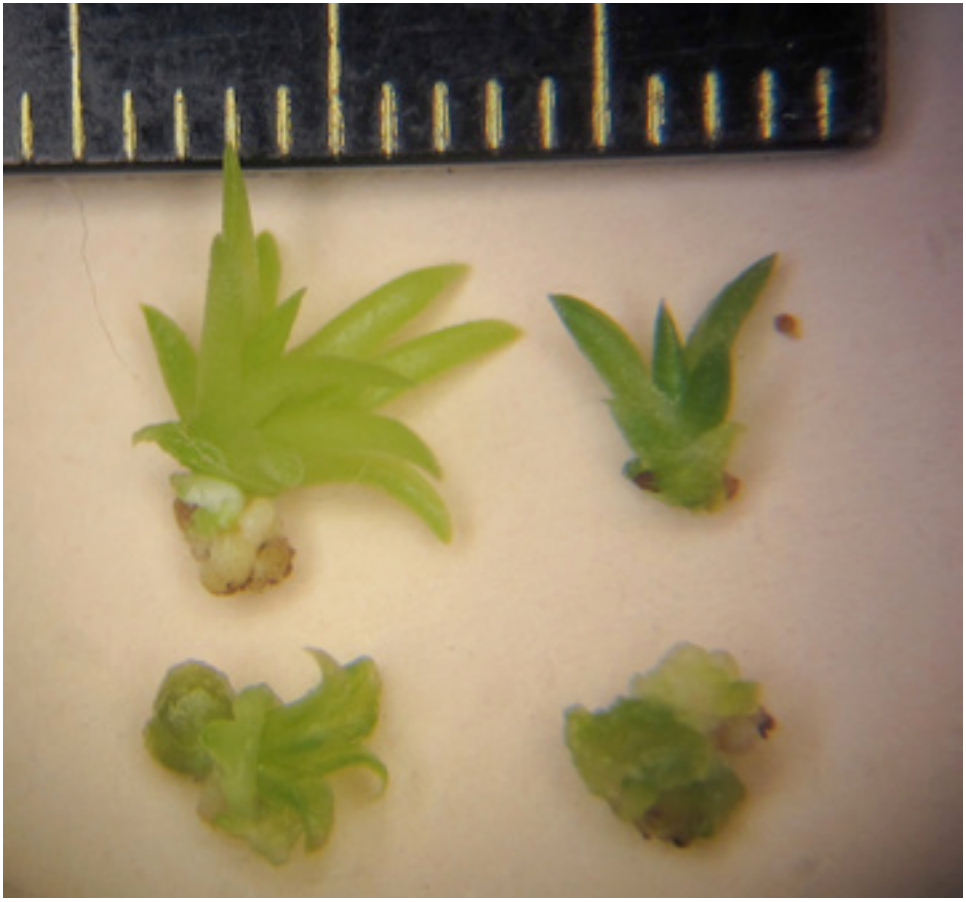

Figure 2. Results from individual germinated seed grown on growth medium range from undifferentiated cell masses (lower right), to a mass of callus with a small plant beginning to differentiate (lower left), to fully differentiated, normal looking small plants (upper row). In the upper left, two plants differentiated from the initial callus. Divisions on the ruler at top are 1 mm. Photo by Michael Dorris.

the ability to form callus (Baylis 1979). In *Phaseolus* (common bean) the concentration of 2,4-D that causes the hypocotyl tissue to regenerate into a plant depends on the species and variety of the explant (Mok 1977), so plant regenerating genes triggered by 2,4-D vary within the population and can be selected for or against. We do not want callus when growing seed so we want genes that influence plants (seedlings) to remain and maintain normality in the face of any environmental vicissitudes, callus resistant genes, or more accurately callus resistant alleles (alleles being a form of a gene). Such alleles are also likely to produce plants that maintain normal growth when exposed to the wide range of environments that can be found in cultivation. We might want callus when propagating plants, however mutation (epigenetic somaclonal variation) encouraging that may be, but not when selecting seedlings for a continuing breeding program.

Edwin George in Plant Propagation by Tissue Culture, observes "Recurrent selection within a species has been effective in increasing the proportion of the genotype capable of regeneration from callus" (George, E., Hall, M., De Klerk, Greert-Jan. 2008. p373). Therefore recurrent selection of plants (Briggs & Knowles 1967) that do not turn into callus on hormone free tissue culture media but remain normal seedlings is possible and can be regarded as a step in the domestication of the plant.

If you are raising *Tillandsia* from seed on a large scale, you can almost always circumvent the problem of too few well-formed seedlings by modifying the medium, but with no guarantee that the resulting plants will ever be well-adapted to conditions normally found in cultivation. This author suggests a better long-term approach would focus on selecting the well-formed seedlings developed on a standard medium, and using these in a breeding program. The proportion of well-formed seedlings is highly likely to increase each generation, and you are more likely to see better growth in the resulting adult plants as they become better adapted to standard cultivation practices.

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Introducing *Orthophytum rafaelii*

Alan Herndon

Orthophytum rafaelii Leme, a species with immense horticultural appeal (Fig. 1), was described only three years ago (Leme & Kollmann 2011). It was published in the journal Phytotaxa; a journal that although readily accessible online, is far too expensive for most bromeliad growers _ even those interested in the more technical aspects of taxonomy. In any case, the species has been in cultivation in Florida for more than 2 years, so we have had enough time to gather photographs and preliminary cultural information. Now it seems appropriate to introduce this species to all BSI members and provide some background for those interested in adding the plant to their own collections.

A disclaimer is necessary. All descriptions herein are based on cultivated specimens that I have access to. Usually, I am only familiar with a single clone from any species, and have no way to know whether that clone is a good representative of the species in the wild. In addition, species grown under favorable conditions in cultivation may look very different from plants of the same species grown under less favorable conditions, or in different climates, and from plants in the wild. The discussions of differences between the species are likewise based on the clones available to me, and may prove to be incorrect when more clones become available for comparison.

Orthophytum rafaelii belongs to the subcomplex *amoenum* of the *Orthophytum*

Figure 1. *Orthophytum rafaelii* a few days before flowers open. Photo by Alan Herndon.

amoenum complex (Leme 2004b), a group also frequently called the 'sessile-flowered' group. Many bromeliad growers will be familiar with the closely related, more commonly cultivated species, *O. navioides* and *O. burle-marxii*. As with all other species of *Orthophytum*, *O. rafaelii* is terrestrial. In order to thrive, it must be planted in soil. Further characteristics shared by members of subcomplex *amoenum* are a thick, slow-growing, vertical stem that does not rise much, if at all, above the soil surface; a dense rosette of narrowly-triangular or linear leaves that are long relative to the width of the stem. This leaf rosette effectively conceals the stem if it does rise above the soil (as seems to be common in cultivation). This stem is terminated by a flat, 'pincushion' type inflorescence. Flowers are large and white (Fig. 2) with the bases of the petals tightly wrapped around each other forming an erect tube below while the petal tips are spreading and often perpendicular to the tube.

Figure 2. Plant in Fig. 1 flowering 3 days later. Photo by Alan Herndon.

Leaves of *Orthophytum rafaelii* are stiff, but not as stiff as the leaves on some other members of subcomplex *amoenum*. Even old leaves are flexible enough to bend 90 degrees without any damage. These leaves grow to 25 cm (10 in) long and 6-7 mm (3/8 in) wide at the 'base'. This width measure is made without removing leaves from the plant, so it a short distance above the actual base of the blade. The upper surface of a leaf blade generally has a thin covering of peltate trichomes that is readily apparent on close inspection, but leaves still appear shiny under typical lighting conditions. A much denser covering of trichomes on parts of some leaves appears during bloom as detailed below. Leaves are edged with conspicuous, light spines that reach 2.5 – 3.0 mm in length. In cultivation, the young leaves on a young rosette are nearly straight, nearly erect and deeply channeled. They start to arc outward at an early stage. As these leaves age, stem thickening moves them to a more horizontal orientation. Also, a bend develops near the leaf base that is independent of the general arching of the blades. This bend becomes stronger as the leaves age. Eventually, leaves on a blooming plant are bending strongly downward (Fig. 3) unless they are being supported by another plant or even one of their own offsets (Fig. 4). By now, the leaves are usually extending well below the bottom of a 6 inch azalea pot. A similar bend is commonly developed in the leaves of other species in the *amoenum* subcomplex, but it seems much more pronounced in *O. rafaelii*. The leaf blades also flatten out as they age, being only shallowly channeled at maturity. On well-fed plants, leaves appear to remain green during most of their life cycle, but color up as the plant nears flowering. When flowering in cultivation, the upper leaves of the rosette turn almost entirely red. A contrasting band of white or green-white is formed by tightly packed light-scattering trichomes near the bottom of the leaf blades that encircle the inflorescence. The inflorescence itself is largely green, but high concentrations of trichomes at the tips of the primary bracts give them a frosted appearance. These primary bracts are also notable for the long marginal spines they possess, and because they tower above the flower bracts and sepals. All flowers in the inflorescence open within a period of approximately 3 weeks, and the leaf colors begin to fade soon after the last flower opens. Offsets are produced on slender stolons that usually stick straight out, and nearly horizontal, from the main stem and are long enough to put the offsets in the outer half of the leaf rosette of the mother plant (Fig. 4 & Fig. 5).

In comparison with other species of the *amoenum* subcomplex in cultivation, *Orthophytum rafaelii* could be most easily confused with *O. roseum* Leme (Leme 2004a) when not in bloom since both have shiny leaves of similar shape and size with conspicuous marginal spines. However, the leaves of *O. roseum* are much stiffer (they cannot be bent more than a few degrees), can be as much as twice as wide at the base of the blade, have trichomes restricted to the innermost ¼ of the upper leaf surface while the lower leaf surface is covered with a very dense layer of trichomes throughout its length. *O. roseum* leaves also remain deeply channeled throughout their life and have

Figure 3. Side view of *Orthophytum rafaelii* about 8 weeks past flower. All but the very topmost leaves are bending well below the horizontal. Primary bracts rise well above the floral bracts and sepals. Photo by Alan Herndon.

Figure 4. *Orthophytum rafaelii* in full color with a half grown offset. Photo by Alan Herndon.

Figure 5. *Orthophytum rafaelii*, about 12 weeks past bloom, with one half grown offset to the right and two very young offsets to the left. Photo by Alan Herndon.

Figure 6. *Orthophytum roseum* in full color just before flowers open. Plant exhibited by Karl Green in the 2004 Bromeliad Society of South Florida show. Photo by Lynne Fieber and Michael Schmale.

Figure 7. Close-up of the inflorescence from the plant in Fig. 6, showing the 'red' primary bracts, flower bracts and sepals. Details of the characteristic white crossbands can be seen in the adjacent leaves. Photo by Lynne Fieber and Michael Schmale.

Figure 8. A well fed plant of *Orthophytum navioides* can have leaves reaching 40 cm (16 in) in length. Another consequence of heavy feeding is the green seen in the offsets and some of the upper leaves. Plant exhibited by Ed Prince in a Bromeliad Society of South Florida show. Photo by Lynne Fieber and Michael Schmale.

conspicuous, dark marginal spines reaching 2 mm in length. Another distinction is that offsets of *O. roseum* are always attached directly to the stem of the mother plant, no stolons of any length have been seen on this species through several bloom cycles, in sharp contrast to the ubiquity of stolons on *O. rafaelii*. In bloom there is no question of confusion. *O. roseum* has a 'red' inflorescence (visible parts of the primary bracts, floral bracts and sepals are all red; flower petals are white) and there are no primary bracts sticking conspicuously above the remainder of the inflorescence (Fig. 6) All leaves turn red shortly before flowers begin to open under well-fed conditions, but a wide, lighter (pink) halo forms immediately around the inflorescence. This halo is the result of a change in color along the length of the leaf. The darker red color seen in the outer portion of the leaf blades changes to the lighter pink somewhere between 2 and 3 cm from the inflorescence A few white 'crossbands' are also normally formed within this lighter halo (Fig. 7). Here, light-reflecting peltate trichomes are concentrated in bands that have high enough density to completely block the underlying pink color. We appear to have a single clone of *O. roseum* in cultivation even though the plants

Figure 9. The shiny red leaves of *Orthophytum navioides* stand in stark contrast to the green inflorescence. Photo by Lynne Fieber and Michael Schmale.

Figure 10. The stigma in *Orthophytum navioides* is held far above the level of the anthers. Photo by Alan Herndon.

were brought into Florida from at least 3 different sources. By the way, if you have a plant in your collection labeled *O.* 'sanguineum', it is very likely *O. roseum*.

At present, I only have a long-leaved clone of *Orthophytum navioides* (L.B. Smith) L.B.Smith (L.B.Smith, 1955), imported from Brazil by Nat DeLeon ca. 1960, in cultivation, and can only compare this clone to *O. rafaelii*. The leaves on this clone of *O. navioides* are narrower and longer than those on *O. rafaelii*, and the trichomes are so widely scattered on both the upper and lower leaf surface that they are difficult to see without magnification. Marginal leaf spines (reaching 1.5 mm in length) are also much less conspicuous. In addition, the leaves of *O. navioides* will develop a shiny red color months before blooming under our conditions in southern Florida. However, both species have leaf blades with approximately the same stiffness and both consistently produce offsets at the ends of thin stolons that tend to travel straight out from the stem rather than diving into the soil (Fig. 8). Both species also have a 'green' inflorescence. In bloom, the red color is unchanged throughout the length of the leaf of *O. navioides* (Fig. 9) until it abruptly turns to green next to the inflorescence. Aside from the leaf differences noted above, the stigma in *O. navioides* is exserted well above the anthers (Fig. 10) while in *O. rafaelii* (and all other species of *Orthophytum* I have examined closely), the stigma does not rise above the level of the anthers.

In flower, the white halo around the green inflorescence may lead some to confuse *Orthophytum rafaelii* with *O. albopictum* Philcox (Philcox, 1985), but the leaves on *O. albopictum* are much stiffer, have less arc and have marginal spines under 2 mm in length. Also, *O. albopictum* does not produce stolons.

In the original description, Leme and Kollmann (2011) compare *Orthophytum rafaelii* to *O. heleniceae* Leme (Leme 2004a), *O. hatschbachii* Leme (Leme 1995) and *O. ophiuroides* Louzada & Wanderley (Louzada & Wanderley 2008). I don't know of any *O. hatschbachii* in Florida collections, so I can't make any comparison. *O. ophiuroides* is in cultivation (and was distributed by Selby Gardens under the name *O. hatschbachii* at least once). The clone in cultivation is a considerably smaller plant than *O. rafaelii* when grown under the same conditions and has much stiffer, narrower leaves, a 'red' inflorescence and no stolons. Also, the red color on leaf blades associated with blooming is restricted to the bottom 1/4 of the blade. *O. heleniceae* is in some Florida collections. The clone I am growing has narrower leaves with much less prominent marginal spines than *O. rafaelii*, but I have not had a blooming plant to study yet.

A major cultural problem facing growers of species in the *amoenum* complex is the reluctance of pups to root once they have been removed from the mother plant combined with a reluctance of the pups still attached to the mother to root until they reach a large size. *Orthophytum rafaelii* may suffer fewer problems in this regard, but I have lived through the slow decline and eventual death of more than one rootless

O. burle-marxii pup that appeared to be more than large enough when harvested. For this reason, I have been extremely reluctant to potentially sacrifice *O. rafaelii* pups to test this idea. However, there have been a few of the inevitable accidents where an offset was detached before it was ready. The offsets from these accidents have all eventually rooted, although some lost many of their original leaves before roots formed and they were able to resume growth.

Other than this, plants in the group appear to be quite hardy under Florida conditions if they will grow here at all. *O. ophiuroides* is the least cold-tolerant in my collection and usually shows some cold damage when grown outside in temperatures approaching freezing. All of the species can tolerate very bright light to full sun, but look much better if given some shade. They actually grow very well, with good color and conformation, in 70% shade.

Orthophytum rafaelii has been available in the Florida market for more than 2 years. Not enough time has passed for local growers to build up stocks yet, so it is still somewhat difficult to find, but you can expect the number of available plants to increase steadily, if not rapidly, over the next few years. While somewhat slow to produce vegetative offsets compared to many species in the *Orthophytum disjunctum* complex, *O. rafaelii* grows well in our Florida environment with only minimal care. Only a single clone appears to be in cultivation, and it does not produce seed autogamously under our conditions.

I plant all *Orthophytum* species, including *O. rafaelii*, in the same well-drained peat moss-perlite mix I use for epiphytes, and few have any trouble unless I forget to repot them for several years. Do not allow yourself to be misled by stories of the harsh conditions *Orthophytum* species face in their natural habitat. They can, indeed, survive an astounding degree of neglect, but will grow extremely slowly and never look good under those conditions. When pampered with consistent watering and high levels of fertilizer, they look better, grow faster and produce many more offsets.

I expect specimens of *Orthophytum rafaelii* to become prominent on show tables in the next few years. As is the case with other species in subcomplex *amoenum*, their compact growth form and striking colors lend themselves to display. Leaves in the rosette of a blooming plant will usually look very fresh as long as you protect the leaf tips from mechanical damage and keep the soil from drying out too much during growth. You will have to contend with a relatively short bloom cycle: at best, any flowering plant from this group will be in prime show condition for 2-3 weeks. Of course, the plants can look very good, even elegant with their arching leaves, when they aren't in flower, so they can always be entered as non-flowering. Still, when you have a plant at the peak of color for a show, it will be one plant everyone stops to admire.

Don't neglect the more commonly available species of subcomplex *amoenum* as show candidates either. *Orthophytum navioides* has been a staple at Bromeliad shows

for decades because a plant with long, bright red leaves cascading well below the bottom of its container is hard to ignore whether it is in bloom or not. Another species that is not available in quantity yet, but is worth looking for, is *O. heleniceae.* This species also has narrow leaves that maintain a distinct (non-red) color for months before blooming. The leaves may not grow as long on this species as on *O. navioides*, but they have a nicely arched habit and hang low enough that you need to protect the tips from mechanical damage.

Above all else, if you want to work with members of this group, be patient with the offsets. We are used to bromeliad cuttings producing roots easily, but never assume the same will be true for these plants. When you start out with only a single specimen, allow the offsets to form roots before harvest, even if this means they reach a ridicuously large size. If an offset is not in contact with the soil surface, mound some soil around it to establish contact. If at all possible, harvest and plant the offsets during the warmest season. If your warm season is not that warm, or you are forced to try rooting offsets in a colder period, try warming the soil in the planting containers. You need to keep the soil warm for several weeks to encourage adequate root growth. Your efforts will be rewarded with plants of great interest and beauty.

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My Bromeliads - Part 1

Lyn Wegner

The first bromeliad I owned, twenty years ago, was a *Neoregelia*. I treated it as a potplant, growing it inside for some time until it 'died'. I liked the plant. I liked all plants and enjoyed gardening, which I was exposed to from a young age, as my father was a horticulturist. The *Neoregelia* fascinated me as it was different. I didn't realize how this fascination would grow and how bromeliads (Fig. 1) would fill every area in my garden and life!

I very gradually, over the next few years, acquired a few more bromeliads. East London, South Africa, where I live, is a fairly small city and there were very few bromeliads at our local nurseries. They were never named but that didn't concern me in those days. Slowly but surely I started collecting plants. I realize now they were varieties that had been around in other parts of SA for many years and must have been imported into the country a long time ago. I didn't have any real 'special' plants although to me they were all special.

I decided early in 2000 that I wanted to start a bromeliad nursery. There were so many people who knew nothing about these fascinating plants and I felt I needed to do something about that. This was the main aim of my small 'nursery', which I named Bromeliads for Africa, which we operate from our home. The expression 'for Africa' is South African and means you have lots of something and in this case I had lots of bromeliads although at that stage they were mostly un-named and 'old' varieties. This is when my collection really began. I started importing plants. This was not something I had thought about or planned to do. It just happened! I imported from a variety of suppliers on numerous occasions with most of my plants coming from Michael's Bromeliads and Tropiflora. Of course I am still importing! Nothing compares with unpacking a pile of boxes filled with broms! Our suburban property (about ¼ acre) is now bursting at the seams as it is jam-packed with broms and I have a huge space problem. I have decided I need to get rid of those broms which aren't as spectacular to make space for special plants. An easy decision to make but not so easy to carry out!

Almost all my plants are potted and many grow in very sunny conditions. I have some broms planted in the garden but I worry about losing their labels. I am very fussy about plants being labeled and (hopefully) correctly labeled. I usually put the label between the leaves but it can be difficult to find especially in the big spiny broms so I have recently started a new labeling system for these plants. Trevor has made me wire spikes & attached green plastic tags onto which I stick the label, which I print on the Brother lettering machine. I am using these for some of the potted broms too. It serves two purposes. I can see the names easily & visitors to the garden can too. I have been using the Brother P-touch printer for many years for my *Tillandsia* labeling

Figure 1. Starting from a single *Neoregelia*, my collection has expanded to cover all but small patches of grass. Photo by Lyn Wegner.

and was surprised to read about Andrew Wilson & Dan Kinnard's recommendation in the BSI March-April 2012 BSI journal. My plants position in the garden, shadehouse and nursery are catalogued so that I know exactly where to find them. It's quite a job to control and a huge problem if I move a plant without updating my lists! I also keep a record of who supplied the plant and whether I have taken a photograph. It would seem that I have a lot of spare time!

I now have about 3000 varieties of bromeliads covering about 60 genera, 500 of which are tillandsias. I have many favourites!

I am a *Billbergia* fan. I love the upright form and the spectacular colours of the foliage. I grow mine in pots in potting soil I purchase from a nursery. I've grouped them by colour, starting with the whites, greens, pinks, and through to the really dark colours. I have some in galvanized metal stands in between those on the paving and these repeat the light to dark coloured foliage (Fig. 2). I grow my billbergias in a lot of sun. They are seldom watered and I don't fertilise them. Some of my favourites are *Billbergia* 'Domingos Martins', which grows extremely slowly, *B.*'Fireworks', *B.*'Ole', *B.*'La Vie en Rose', *B.*'Teng Ee', *B.*'Cherry Cordial', *B.*'Lilac Time', *B.*'Ivory Tower',

Figure 2. Potted *Billbergia* clumps dominate this display. Most of the pots are jammed together on the ground, arranged by foliage color. The metal pot holders provide a vertical element and more growing space. Photo by Lyn Wegner.

B.'Darth Vader' and my most recent addition *B.*'Bruddah Iz'. Of course *B.* 'Lyn Wegner' is very special! Thank you Dennis Cathcart. It's a pity their inflorescences are so short-lived although if a plant has beautiful foliage I don't need a flower too.

My aechmeas are almost all growing in sunny areas. It has been exciting to see some blooming for the first time, *Aechmea* 'Blue Moon', *A. megalantha*, *A. haltonii*, the variegated clone of *A. bracteata*, *A.*'Orange Sherbert', *A.*'Patricia', *A.tessmannii* Pink, *A. mexicana* and the variegated *A. mexicana* (aren't those berries gorgeous!) to name a few. I like the *A. nudicaulis* varieties and I have grouped them together in a very sunny spot. I have about 20 varieties with my latest being *Aechmea* 'Rafa'. I have some mounted but most are grown in pots. *Aechmea* 'Roberto Menescal' is starting to look good! I have a collection of *Aechmea fasciata* varieties and I grow these in pots in filtered light with a little sunshine. My *A.orlandiana* varieties grow in lots of sun (Fig. 3), also potted but I plan to mount more. I love to see the sun shining through the colourful foliage. *A.* 'Shogun', *A.* 'Samurai' & *A.*'Unstable Mabel' are potted and growing in the sun while the beautiful *A. zebrina* is close by. I am trying to get it to attach to a brick pillar so that the foliage is more visible.

A few favourite aechmea varieties are *Aechmea pectinata*, I have them potted and mounted, *A.*'Skotak's Spirit', a new one which really looks ghostly!, *Aechmea* 'Shining Light', grown in bright light, make a beautiful show when they are all blooming. I love the *A. lueddemanniana* varieties with their beautiful foliage and then those gorgeous shiny white berries which become beautiful mauve berries as they age. I grow them in a sunny spot. Isn't the flower spike of *A. leptantha* spectacular!

I like the form of the spiky aechmeas such as *A. triangularis*, *A.setigera*, and *A. bromeliifolia*,

I find growing *Cryptanthus* a challenge. After attending the 2008 Cairns World Conference (my first World Conference!) I was inspired to make more effort with my members of this genus. I grow them under cover in a small area where I used to grow *Phalaenopsis* orchids. It is a warm spot with bright light. They are potted in a mixture of 3 parts potting soil, and 1 part each sagex balls & small stone. I gave them all some granular slow release pellets. I have about 100 varieties, some doing really well and some really not doing well! *Cryptanthus* 'Thelma O'Reilly' grows easily & I love her! I am pleased *C .lutherianus* is looking good after a slow start. *C.* 'Racing Stripes' is also doing very well as is another favourite, *C. colnagoi*, *C.* 'Uluwehi', *C.* 'Rita Padden', C. 'Garnet Gloss', *C.* 'Absolute Zero', *C.* 'Nalo Greens' and *C.* 'Pomegranate' to name a few.

I have a few *Alcantarea* varieties and the first to bloom is *Alcantarea odorata*. The *A. imperialis* are huge so I hope it won't be too long before they also bloom. They are

Figure 3. An interesting piece of wood is used to highlight *Aechmea orlandiana* 'Ensign'. In the background is *Aechmea zebrina* against a brick pillar. Other plants in the arrangment include many *Neoregelia*, and also a few *Canistrum*. Rocks are also used to provide more visual variety and provide a boundary for the arrangement. Photo by Lyn Wegner.

all planted in the garden in sun except *A. odorata* and *A. nahoumii*, which are potted, and growing in a shadier position.

A variegated *Wittrockia cyathiformis* is blooming for the first time. It's always so exciting to have a brom blooming for the first time. *Hohenbergiopsis guatemalensis* is developing a spike now, the second time it is blooming for me and I'm excited all over again!

My *Neoregelia* are everywhere (Fig, 4-9) All sizes appeal to me, from the largest to the smallest. Planted in the garden, or in pots, mounted, in hanging baskets, or placed in metal stands. I don't fertilise them and many of them grow in a lot of sun (Fig. 4). The sunny conditions are a little too harsh for some with the foliage looking a little bleached but they manage. Ideally I would like to have more areas of filtered bright light but not under messy trees! I have many favourites such as *Neoregelia macwilliamsii*. It is not one of the more spectacular varieties but when they flush they really are spectacular. I grow them mounted in a sunny position and they do really well,

Figure 4. *Neoregelia*, including *N. carolinae* x *compacta* x *macwilliamsii* in the lower right corner, dominate much of the collection. Photo by Lyn Wegner.

Figure 5. *Neoregelia* plants are mostly in pots placed in groups throughout the grounds. Most are at ground level where the foliage colors can be best appreciated. Photo by Lyn Wegner.

Figure 6. Close-in on a small patch of *Neoregelia.* Although the bromeliads are the primary subject of the garden, there is always room for decorative stones or pieces of garden art that enhance the arrangement. Photo by Lyn Wegner.

pupping like crazy! I love all the mini neos too. Isn't *N.* 'Gizmo' the cutest little thing! I have many stoloniferous minis and I allow them to form nice clumps. They grow in small pots, often in metal stands or in wire baskets. My *Neoregelia* 'Lorena Lector' (hybridiser Ray Coleman's beauty) is spectacular! Grown in lots of light and possibly a little bleached but everyone stops in their tracks when they see her. *Neoregelia* 'Gee Whiz' is really a gee whiz! huge and spectacular. *N.* 'Fancy Francis' is really fancy! *N. cathcartii* and *N.* 'Linda Cathcart' are positioned side by side. I have a nice collection of *N. carcharodon* varieties growing in a sunny spot with my favourite probably being *N. carcharodon* 'Rainbow'. *Neoregelia* 'Baby Skotak' is a really big and beautiful boy! He is in a bed with other super spectacular neos such as *N.* 'Chester'. *N.* 'Arctic Blast', which is a recent new arrival, is a wow plant.

I try to group plants by shared characteristics. For instance, *N.* 'Blueberry Muffin', 'Blueberry 'Pie', *N.* 'Blueberry Smoothie', *N.* 'Blueberry Tart' & *N.* 'Blueberry Tiger' are together in a sunny spot. In other cases, they are grouped by shared foliage color or other less esoteric character.

Figure 7. Metal pot holders are placed throughout the garden. They provide extra growing area and the shade from the high baskets of plants helps any less tolerant forms at ground level. The green cards holding the name tags are also visible. Tree trunks and branches are also used for vertical plantings, but they are not common enough to meet all of the demand. Photo by Lyn Wegner.

I love the *N. chlorosticta* 'Marble Throat' varieties. They are all grown in pots grouped together in a bright light position.

I struggle to decide which colours are my favourite. I like the brightly coloured and spiny neoregelias but I'm drawn to the gentle soft colours too. I like the pinks, lilacs and purples, and the banded beauties. I like them all!

Werauhia sanguinolenta 'Rubra' makes a beautiful huge splash of dark maroon in a sunny position. It hasn't bloomed for me yet. *Quesnelia marmorata*, and the gorgeous curly *Q.* 'Tim Plowman' and *Q.* 'Rafael Oliveira' are in pots grouped near our entrance in plenty of sun where they grow and bloom well. I have *Q. marmorata* scrambling over a rock and mounted too, but they seem happier and grow faster planted in soil. The turquoise inflorescence of *Quesnelia seideliana* blows me away! What a pity they are so short lived.

Figure 8. A 'raft' of miniature *Neoregelia* clumps proves a splendid method to conceal a pool filter cover. Photo by Lyn Wegner.

Figure 9. Every inch of growing space must be used. Light tolerant plants above, less tolerant plants on the ground. Photo by Lyn Wegner.

Neoregelia 'Marble Throat' and *N.* 'Easter Egg'

Geoff Lawn[1]

In the past 30 years there has been an increasing trend to breed more mottle-leaved cultivars, particularly focusing on white/pink/green combinations in miniature Neoregelias. A key species form in these crosses is *Neoregelia* 'Marble Throat', a Brazilian cultivar of unknown origin released with no positive I.D. about 1975 by Lotus Osiris Nursery, Brazil. This was named *N.* 'Marble Throat' by Bill Seaborn of Seaborn Del Dios Nursery, Escondido, California and later determined by Harry Luther to be a select form of *N. chlorosticta*. *N.* 'Marble Throat' (Fig. 1) is a small upright rosette to 15cms. diameter and 20cms. tall with 5cms. long stolons. The green leaves spotted white have heavily-marbled cream inner leaves and white petals. The rosette base is sepia red with green spotting and the entire foliage can flush pink in strong light. This mottle gene seems dominant and transmits well to many hybrids. To date the Bromeliad Cultivar Register (http://registry.bsi.org/) under Advanced Search lists N. 'Marble Throat' for 29 entries as a seed parent and 3 entries as a pollen parent, but other unrecorded crosses are known to be in cultivation.

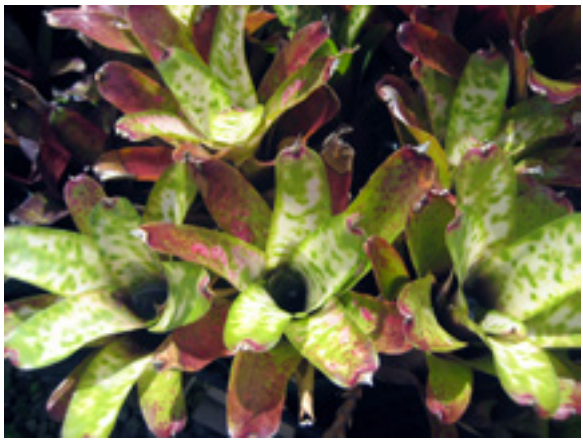


Figure 1. *Neoregelia* 'Marble Throat' in Oahu. Photo by Lisa Vinzant.

In 2007 Hawaiian breeder Lisa Vinzant of Olomana Tropicals, Oahu produced N. 'Easter Egg' (Figure 2). This is a complex hybrid ('Ruby Throat' x 'Pink Mosaic'). Lisa's own cross N. 'Ruby Throat' ('Honi Honi' x 'Marble Throat') has 'Fireball', 'Nana', *sarmentosa* and 'Fairy

Figure 2. *Neoregelia* 'Easter Egg' at Olomana Tropicals. Photo by Lisa Vinzant.

[1]BSI Cultivar Registrar. email: cultivars@bsi.org.

Paint' in its ancestry. The pollen parent 'Pink Mosaic' ('Marble Throat' x ?) was bred by pioneer Hawaiian grower Hatsumi Maertz.

All this lineage behind *N.* 'Easter Egg' (Fig. 2) has produced a midi-sized, broad-leaved, open rosette to 25cms. diameter. In strong light the foliage features a good balance of green, cream and pink marbling throughout, reminiscent of a candied, decorative Easter egg. Even in the relatively-mild Hawaiian winter, leaf colouring and markings are still attractive (Fig. 3) with little loss of marbling.

Figure 3. *Neoregelia* 'Easter Egg' during a Hawaiian winter. Photo by Lisa Viinzant.

IN MEMORIUM

Joyce Brehm

Dr. Larry Giroux

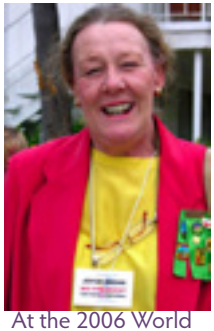
During the third week of February 2013, Joyce Brehm lost her long battle with cancer and lung disease…on that day the bromeliad community lost a dedicated servant.

For nearly 4 decades, Joyce has contributed in so many ways to encourage the growth of the bromeliad hobby throughout the World. Already an avid collector of bromeliads, she joined the San Diego Bromeliad Society in 1976. In the following years she served as President, Vice President, Secretary, Treasurer, Sunshine Committee member, Hospitality Chair and the Newsletter Editor. The San Diego Bromeliad Society has afforded themselves of Joyce's organizational talents by having her as their Show Chair and Judges' Chair innumerable times. As though this was not enough commitment of her time and efforts, she joined the BSI in 1978 and became a devoted advocate for the advancement of this International organization.

Joyce Brehm. Photo courtesy of Larry Giroux.

From 1995 to 2000, Joyce served as the BSI Recording Secretary; from 1999 to 2004 as the California Regional Director. She also assumed the position of Nominations Chair in 2002. In 2004 she began a 6 year term as BSI President.

During the years 2005-2006, Joyce authored a serial column for the Journal of the Bromeliad Society, entitled – "Did You Know". These articles gave the membership of the Bromeliad Society an insight into the various committees, the workings of the BSI as well as valuable information about procedures such as registering new cultivars and importation of plants into the United States. She carried on providing education during her Presidency by attending various bromeliad functions throughout the United States and giving relevant programs and having Question and Answer sessions. I might add, her travel was at her own expense.



At the 2006 World Bromeliad Conference. Photo courtesy of Jay Thurrott.

Joyce was a Registered Nurse and travelled extensively. As a research consultant, she would audit medical records for several pharmaceutical firms throughout the United States. Her frequent flyer miles were often donated to BSI officials to allow them to attend Board meetings, they could otherwise not afford.

Joyce was instrumental in bringing the World Bromeliad Conference to San Diego in 1994 and 2004 and served as their Chair. In addition, she was the Co-chair of the 2000 WBC in San Francisco, which celebrated the 50th Anniversary of the BSI. She also served as Sales Chair for the 2002 and 2004 conferences.

Besides implementing policy changes during her tenure on the BSI Board, she was an Editor of the first Cultural Manual, published in 1992 by Mark Dimmit. In association with Herb Plever, she revised, edited and published subsequent versions of this BSI publication, which has turned out to be an essential guide for new growers of bromeliads and a major sale item at Affiliate Societies' bromeliad sales and on the BSI website online store, which Joyce helped to expand.

In spite of her involvement with the politics of it all, Joyce never lost her interest in the plants. She possessed a profound skill for growing bromeliads, which she shared with her home society, the San Diego Bromeliad Society and many other plant and flower organizations through programs and demonstrations. In WBC and local show halls, besides the highest ribbon awards, she earned many other top awards including the top horticultural award – the Mulford B. Foster trophy. This plaque offered by the BSI, is given to the plant voted by BSI accredited judges as showing excellence of form, cultural perfection and presentation over all other horticultural entries in the Show. Her talents didn't stop there; Joyce also won several Morris Henry Hobbs, Best of Artistic Awards for her skillful arrangements using bromeliads.

Joyce furthered her involvement with bromeliads by becoming an accredited Master Bromeliad Judge. She travelled extensively to judge shows throughout the United States and abroad. She even used these opportunities to further educate clerks working these shows or the public who attended.

I don't know why it is in our nature as human beings not to be more appreciative of what we have when we have it. In Joyce Brehm we had a person who continuously gave without considering the cost to herself in time, money or stress. We need more people like Joyce. When we receive the gifts they give us, as a legacy to their memory and as a statement to our appreciation, we need to share these gifts at every opportunity.

Whole hearted sympathy and prayers go to Joyce's two sons, her grandchildren, friends and other family. We have lost a true champion of the Bromeliad World. A consolation to Joyce's passing is that so much of her still remains in those of us who learned from her.

Call for Nominations for BSI Directors, 2014-2017

Dr. Larry Giroux

Each year as Directors' terms expire, the BSI Nominations Chair asks BSI members to nominate eligible BSI members to serve as BSI Board of Directors representatives from their respective regions. If more nominations are made than there are open positions for a region, the BSI members in that region are asked to vote on the nominees. The first important step is to nominate people for the directors' open positions. Below is the list of open positions for the 2014-2017 three-year term (per a change in the Bylaws, terms for Directors and Officers begin at the end of the Annual Board Meeting). If you are a member of a district with an open position, please help your district by finding a willing person to be nominated for your district's open Directorship. If you have questions about nominating an individual or wish to be nominated, please call the Nominations Committee Chair, Dr. Larry Giroux. His contact information is listed below. Instructions regarding who can be nominated and how to nominate follow.

At the end of 2011, the Board reassigned the States and Territories of the US Regions. Although members may be in a new region, their overall representation has remained the same. The current assignment of the Regions and the number of Directors allowed by the October 2013 BSI Membership Census are as follows.

AUSTRALIA 2 Directors

INTERNATIONAL 3 Directors

NEW ZEALAND 1 Director

US CENTRAL STATES 3 Directors

(US Central States: Arkansas, Arizona, Colorado, Idaho, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah and Wyoming).

US EASTERN STATES 1 Director

(US Eastern States: Alabama, Connecticut, Delaware, Georgia, Iowa, Illinois, Indiana, Kentucky, Maine, Massachusetts, Maryland, Michigan, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Vermont, West Virginia, Wisconsin and District of Columbia.)

US SOUTHERN STATES 5 Directors

(US Southern States: Florida, Puerto Rico; all US territories and possessions in the Atlantic and Caribbean areas.)

US WESTERN STATES 3 Directors

(US Western States: Alaska, California, Hawaii, Oregon, Washington, all United States territories, possessions, and trust territories in the Pacific area.)

The Regions for which Directors are up for re-election or there are new vacancies and the numbers of directors for the 2014-2017 term are as follows:

International	1 Director up for election; 1 new nominee for Director needed
Australian	1 Director up for re-election
US Western States	1 Director up for re-election; 1 new nominee for Director needed
US Southern States	3 new nominees for Directorships are needed

The BSI By-laws require that all positions up for re-election be advertised in the Journal and a vote be taken in Regions where there are opposing nominees for these positions. If there are one or more new nominees, there will be an election between the new nominees and the incumbent (if there is an incumbent seeking another term).

Australian Region: Any other nominees for the (1) Australian position will be running against the incumbent: Adam Bodzioch (who is finishing an appointed term and is up for election for his 1st elected term).

International Region: If there is more than (1) new nominee for the (2) International Director positions there will be an election between the new nominees and Eric Gouda (who is finishing an appointed term and is up for election for his 1st elected term).

US Southern States Region: If there are more than (3) new nominees for the (3) US Southern States' positions there will be an election between all the nominees for the three positions.

US Western States Region: If there is more than (1) new nominee for the (2) US Western States' positions there will be an election between the nominees and the incumbent Nancy Groves.

Nominations to serve on the BSI Board of Directors for the three-year 2014-2017 term opened January 1, 2014. Serving on the BSI Board is both fun and interesting. The Board makes decisions that influence the direction and activities of the BSI. Board meetings are held annually, usually sometime during the northern hemisphere's summer or on alternate years at the BSI's WBC. Board members, except International Directors, are expected to attend these meetings and do so at their own expense. The cost need not be prohibitive because Board members can share hotel rooms. One of the Board's activities is to actively participate in the semiannual World Bromeliad Conferences. All BSI members are encouraged to participate in the nomination and election process for Board members.

Who may nominate? Any voting member of the BSI who resides in a region for which there is an opening may nominate a candidate for an opening in that region.

Who may be nominated? A nominee must have the following credentials: (1) be a voting member of BSI and have been a voting member for the three consecutive years prior to nomination; (2) reside in the region for which he/she has been nominated; (3) not have served two consecutive terms as a director immediately preceding nomination; (4) agree to being nominated; and (5) agree to serve as a director if elected and to remain a member of the BSI for the duration of his/her term.

Procedure for nominating: (1) obtain the consent of the prospective nominee and verify compliance with the qualification criteria; (2) mail or email nominations to the Chairman of the Nominations Committee between January 1, 2014 and August 8th, 2014, inclusive. Phone nominations will be accepted, but may be rejected if confirmation of qualifications in written form are not received by the deadline. (3) supply with each nomination the full name, address, and telephone number and e-mail address, if applicable, of the nominee, the position for which the nomination is being made, the local society affiliation, the nominee's BSI Membership number, and a brief "bromeliad biography" of the nominee. If you have not heard from the Chairman within 48 hours, please confirm with him that your nomination was received.

Please mail nominations to:

Dr. Larry Giroux, BSI Nominations Chair
3836 Hidden Acres Circle N
North Fort Myers, Florida 33903 USA

239-997-2237/ 239-850-4048 or email to: nominations@bsi.org, DrLarry@comcast.net or DrLarry@centurylink.net

Call for Nominations for BSI Officers

Dr. Larry Giroux

Periodically as determined by the BSI Bylaws, the BSI Nominations Chair asks BSI members to nominate BSI Officers to serve or be re-nominated to serve on the BSI Board of Directors. If more than one candidate is nominated for a position, the BSI Board of Directors (which consists of the officers and directors of the Society) vote on the nominees. Below is the list of BSI Officers' positions up for election or re-election. Instructions regarding who can be nominated and how to nominate follow.

Recording Secretary for 2014-2016

Any new nominees for the Recording Secretary's position will be running against the incumbent: Sara Donayre

Treasurer for 2014-2015

Any new nominees for the Treasurer's position will be running against nominees Ben and Kay Klugh.

Editor for 2014-2015

Any new nominees for the Editor's position will be running against the incumbent: Alan Herndon

The following are excerpts from the BSI Bylaws concerning BSI Officers and their election.

"1. Enumeration. The officers of this society shall be the President, the immediate Past President, the Vice-President, the Editor, the Membership Secretary, the Secretary, Webmaster and the Treasurer. They shall be elected by a majority vote of the Board of Directors (the board) at its annual meeting or as provided otherwise.

2. Eligibility requirements. Each candidate for office shall be a member in good standing of BSI and agree to remain in good standing during tenure if elected. Candidates for the offices of President and Vice-President shall have served at least one term as director.

3. Nomination and election.

a) The chairman of the Nominations Committee shall ascertain the individual membership status of the candidates from the membership secretary and make the nominations to the board 30 days before the annual meeting of the board. Any director may nominate from the floor at that meeting.

b) Elections shall be by ballot. If there is only one nominee for an office, a voice vote shall suffice.

4. Terms of office.

a) The President and Vice-President shall serve three years or until their successors are elected. Their tenures shall begin at the conclusion of the meeting at which elected. Neither may serve more than two terms in those offices.

b) The immediate Past President shall serve for a one-year term.

c) Other officers shall serve two year terms or until relieved by the board of their duties either at their own request or by the board for cause. "

Who may nominate? Any voting member of the BSI. Who may be nominated? A nominee must have the following credentials: (1) be a voting member of BSI and agree to remain in good standing during tenure if elected. (2) for President or Vice-President--have served a least one term as a director. (3) agree to being nominated; and (4) agree to serve as an Officer if elected and to remain a member of the BSI for the duration of his/her term.

Procedure for nominating: (1) obtain the consent of the prospective nominee and verify compliance with the qualification criteria; (2) mail or email nominations to the Chairman of the Nominations Committee beginning January 1, 2014. Nominations must reach the Chair of the Nominations Committee by 30 days prior to the Annual Board Meeting, scheduled for September 9th, 2014 in Honolulu, Hawaii. Nominations by telephone will also be accepted, but must be confirmed in writing within two weeks; (3) supply with each nomination the full name, address and telephone number and email address, if applicable, of the nominee, the position for which the nomination is being made, the local society affiliation, the nominee's BSI membership number and a brief "bromeliad biography" of the nominee.

Please mail nominations to:

Larry Giroux, BSI Nominations Chair
3836 Hidden Acres Circle N
North Fort Myers, Florida 33903 USA

239-997-2237/ 239-850-4048 or email to: nominations@bsi.org or DrLarry@centurylink.net

Photo Gallery - Close-ups

Neoregelia carolinae, descendant of a plant in the Mulford and Racine Foster collection. Beginning to flower in May 2014. Photo by Alan Herndon.

Neoregelia guttata, plant from the collection of Roberto Menescal. Flowering in June 2013. Photo by Alan Herndon

Neoregelia wilsoniana, descendant of the plants originally brought from Brazil to southern Florida by Bob and Catherine Wilson and sold in their nursery, Fantasitic Gardens. Flowering in March 2014. Photo by Alan Herndon.

Bromeliad Society International Membership Rates

Mailings to USA addresses
(includes bulk mail rate— for first class mail add $5 per year)

	1 Year	3 Years
Individual	$45	$125
Dual	$60	$170
Affiliate Society	$30	$90
Institutional	$50	$140
Commercial	$65	$185

Mailings to Non-USA addresses (includes Airmail delivery)

	1 Year	3 Years
Individual	$50	$140
Dual	$65	$185
Affiliate Society	$35	$105
Institutional	$55	$155
Commericial	$70	$200

Life Membership (*one time only fee*) $900.

Payment by check or money order payable to The Bromeliad Society International. USA members: US Banks and US funds only. International members: US funds only; US domestic checks, international money order, or foreign bank cheques. Credit card payments and sign-ups/renewals may be made online at www.bsi.org.

Please send mail transactions to: Annette Dominguez, BSI Membership Secretary, 8117 Shenandoah Dr., Austin, TX, USA 78753-5734. 502 619-2750.

Events Calendar

26-27 July 2014 - Sacramento Bromeliad and Carnivorous Plant Society annual show and plant sale at the Sacramento Garden and Arts Center, 3330 McKinley Blvd. in Sacramento, CA 95816.

2-3 August, 2014 - South Bay Bromeliad Associates, annual BSI Judged Bromeliad show and sale. The show and sale are in the 3rd & 4th greenhouses at Rainforest Flora Inc. about 6 miles south of the Los Angeles International Airport, 19121 Hawthorne Blvd, Torrance, CA 90503.

8-14 Sep 2014 - The Hawaii Bromeliad Society hosts the World Bromeliad Conference at the Ala Moana Center, Honolulu.

14-15 Sep 2014 - Illawarra Bromeliad Society Inc., annual show and sale as part of the "Spring Into Corrimal" Festival. Plants will be offered for sale. Location is the Uniting Church Hall, Russell Street, Corrimal, New South Wales, Australia.

20-21 Sep 2014 - The Southeast Michigan Bromeliad Society, Inc. (with the Michigan Cactus and Succulent Society, Inc.), show and sale, Matthaei Botanical Gardens, 1800 N. Dixboro Road, Ann Arbor, MI 48105.

18-19 Oct 2014 - Bromeliad Society of Australia, Spring Show.

19 Oct 2014 - Dutch/Belgian Bromeliad Society (BCG), second standard show of 2014. Normally there is also a plant Auction or Lottery. Utrecht University Botanic Gardens, Budapestlaan 17, Utrecht, Netherlands.

25-26 Oct 2014 - The Southwest Bromeliad Guild, 36th Annual Show and Sale at the DoubleTree by Hilton Hotel Houston Intercontinental Airport, 15747 John F. Kennedy Blvd., Houston, TX 77032.

7-9 Nov 2014 - Sarasota Bromeliad Society, annual show and sale, Southgate Community Center, 3145 Southgate Circle, Sarasota, FL 34239

21-23 Feb 2015 - The Bromeliad Society of New Zealand, annual competitive show and sale, at the Mt. Eden War Memorial Hall 487 Dominion Rd Balmoral Auckland.

Additional details are available for all of these shows on the home page of the BSI website (www.bsi.org). Look under under the events tab for the events calendar tab.

The Bromeliad Society International

The purpose of this nonprofit corporation is to promote and maintain public and scientific interest in bromeliads through support of scientific and horticultural research, preservation, and display of bromeliads, both natural and hybrid, throughout the world. You are invited to join in this endeavor.

OFFICERS

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