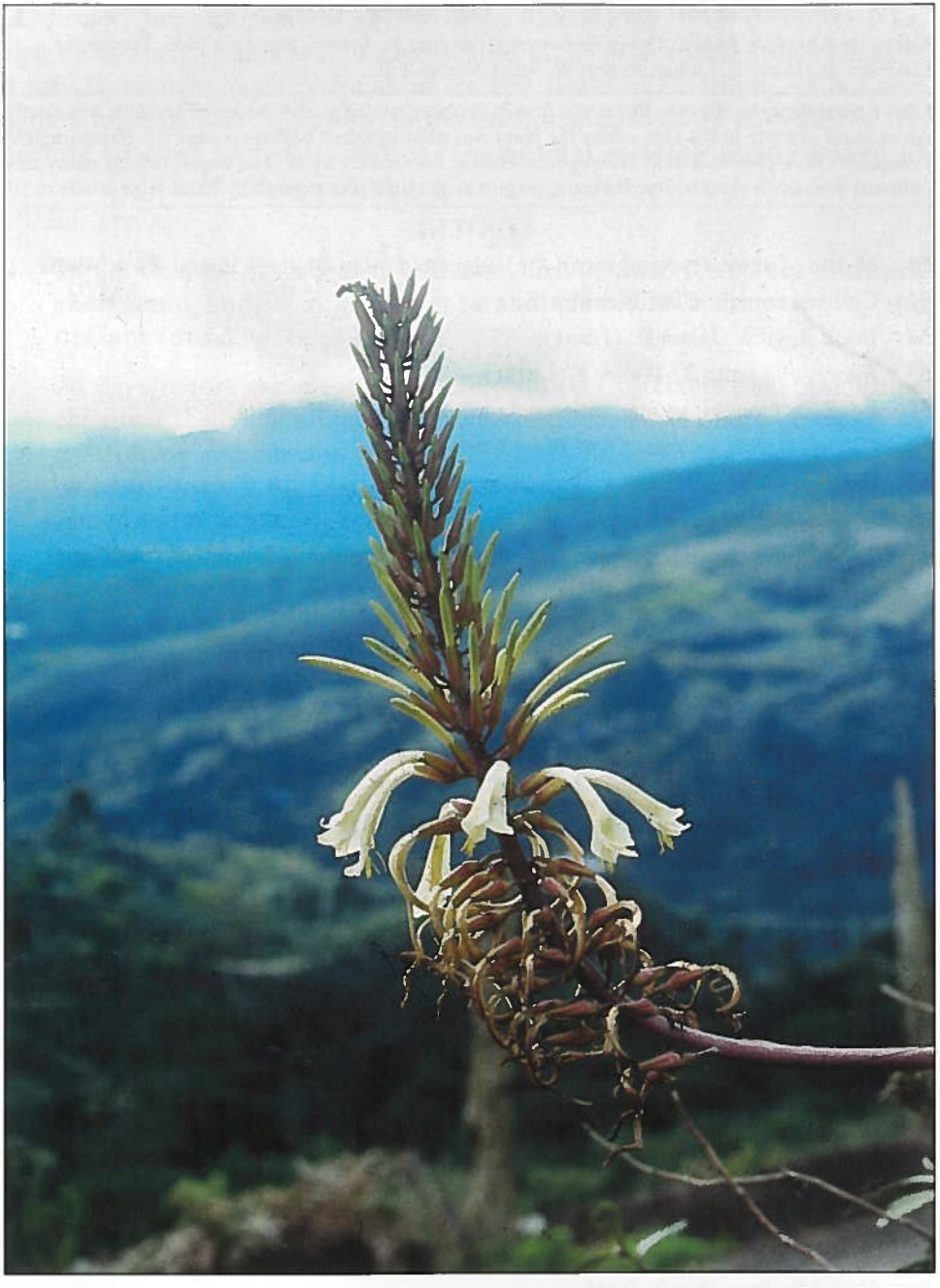
Journal of The Bromeliad Society



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Journal of the Bromeliad Society

Vol. 49, No. 2 March–April, 1999

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Cover photographs. Front: *Pitcairnia brevicalycina* growing in the Andes of western Venezuela. An account of a trip to the area where the plant was photographed begins on page 65. Photograph by Francisco Oliva-Esteve. **Back:** *Neoregelia* 'Goode for Grace', by R. L. Frasier, one of many new cultivars heavily flushed with red when grown in bright light. Photograph by Ellen Baskerville.

CONTENTS

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Notice of Annual Meetings, Call for Budget and Other Business Items

You are hereby notified that the **annual general meeting** of the Bromeliad Society International will be held at the Ramada Inn, 1110 Baltimore Pike, Glen Mills, Pennsylvania at 8:30 a.m. on June 12, 1999 to consider such business as may be brought to the attention of the BSI Board of Directors. All business matters must be sent in writing to the president at least 60 days before the meeting (Bylaws, Art. VII, part 2). The **annual meeting of the Board of Directors** will be held immediately after the general meeting. The following schedule applies:

1) 90 days before the meeting: Officers, directors, and committee chairmen shall send budget requirements and financial accounting to the treasurer.(Standing Rules 3 and 6).

2) 30 days before the meetings: Officers, other directors, and committee chairmen shall submit annual reports to the president and send copies to each officer and director. (Standing Rules 3 and 6). Annual reports are due by May 12, 1999. Agenda items that would require a vote by the board of directors should be submitted to the president by April 12, 1999 for inclusion in the agenda.

3) 30 days before the meetings: the president will mail the agenda to each officer and director. (Standing Rule 3,par. 2g).

Chairmen of the standing committees are elected by the Board of Directors. Nominations may be made by any member of the society in writing at least 30 days before the annual meeting. Nominations may also be made from the floor.

Any BSI member who has an issue or issues that they wish to be brought before the board, may either attend the general members meeting preceding the Board of Directors meeting or convey those issues to their local Director who is a member of the board. A list of all Directors, the regions they represent, and their current addresses can be located on page 95 of this issue of the JOURNAL.

Thomas W. Wolfe, President,
5211 Lake Le Claire Road,
Lutz, Florida, 33549

Cultivar Corner

Chet Blackburn

[Ed. Note: This continues a series started by Ellen Baskerville in 1998 when she was Cultivar Registrar. The "Cultivar Corner" will appear periodically in the Journal as a means of introducing registered cultivars to our readers.]

Aechmea 'Black on Black' (figure 1), a cultivar of a cross between *A.victoriana* var. *discolor* and *Aechmea recurvata* (red form.) The mature plant is only 12 to 18 inches (3—4.5 dm) in height with about 12 glossy, blackish, tapered leaves in an upright *recurvata* type of rosette. The inflorescence is low and resembles the *recurvata* parent. This is a 1988 John Anderson cultivar registered in 1994.

Photograph by John Anderson

Figure 1.
Aechmea 'Black on Black'

The parentage of John Arden's *Vriesea* 'Mirage' (figure 2) is described by Beadle (1998) as "cv. of ('Poelmannii x 'Red Chestnut') x *V. platynema* var. *variegata.*" The plant is approximately 2 feet (6 dm) tall without the inflorescence and reaches 3.5 feet (1 m) in inflorescence. The foliage resembles the *V. platynema* parent with its center leaves fading to almost white with a purplish tinge before the inflorescence appears. Registration documents were dated in 1996.

Neoregelia 'Castigado' is a another Chester Skotak hybrid that forms a colorful rosette of about 50 leaves in more or less 4 symmetrical tiers. The leaves are close to 16 inches (4 dm) long with a wide central cream-white variegation and green margins. Good light produces extensive reddish striation and blotching. The center of the plant becomes a deep purplish-red when the plant is coming into bloom. The parentage is listed as "cv. of (*N. carolinae* x *N. concentrica*) x (*N. concentrica* x *N.* 'Takemura Princeps'). The plant was registered in 1995.

Photograph by Pamela Koide

Figure 2.
Vriesea 'Mirage'

Photograph by R. L. Frasier

Figure 3.
Neoregelia 'Castigado'

Neoregelia 'Goode for Grace' (back cover) is an R. L. Frasier cross between a cv. of [(*N. carolinae* x *N. concentrica*) x *N.* 'Royal Burgundy'] x *N.* 'Charm'. It is described by its originator as "a dark green plant with creamy-white variegation that is usually flushed with pink and overlain with white spots and some dark rose blotching." The leaves are about 2 inches wide and the plant reaches about 14 inches in width. The name honors Grace Goode of Australia for her role in developing one it this plant's parents, *Neoregelia* 'Charm'. Registration papers were filed in 1998.

REFERENCE

Beadle, Don A. The Bromeliad Cultivar Registry. Bromeliad Society International.

June 1998.
Auburn, California

Book Review

Jason R. Grant

Checklist of the Plants of the Guianas (Guyana, Surinam. French Guiana). 2nd ed. Boggan, J., V. Funk, C. Kelloff, M. Hoff, G. Cremers, & C. Feuillet. 1997. Prepared under the auspices of the Centre for the Study of Biological Diversity, University of

Guyana, Georgetown, Guyana. 238 pages, soft cover, 28 cm. Order from: Biological Diversity of the Guianas Program, Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560. Copies available at no charge while supplies last.

This is a checklist to the vascular plants of the Guianas. The Bromeliaceae are listed on pages 67-69. 156 taxa are recognized to occur in the flora area. After each taxon in the list, an indication of which countries it is known to occur in is given. Following the main list is a second presenting synonyms and misidentifications. Since this is merely intended to be a checklist, there are no descriptions or citations. This is another important work covering an important part of the distribution of the family.

Neoregelia Notes 3

Harry E. Luther

Neoregelia cathcartii C. F. Reed & R. W. Read has been a mysterious and controversial plant since its description (Reed & Read, 1981). The authors were uncertain as to its placement in *Neoregelia*. They compared it to *N. eleutheropetala* in subgenus *Hylaeaicum* even though the flowers of their new species were typical for subgenus *Neoregelia* in size, shape and coloration. Even the shape and texture of the leaves of *N. cathcartii* are quite different from *N. eleutheropetala* and its relatives, being rather thin-leathery with the leaf tips broadly acute and apiculate, not tough, thick and rather fibrous with acute to acuminate and pungent leaf tips. It is quite certain that its affinities are not in the Amazonian subgenus of *Neoregelia*[1] but what is not at all certain is what are its closest relatives in the typical Brazilian subgenus of *Neoregelia.* The bracts and flowers of *N. cathcartii* somewhat resemble those on *N. macrosepala, farinosa,* and *magdalenae* but in other features it seems quite distinct.

Neoregelia cathcartii is known from a single collection from northern Venezuela from the Parque Nacional Rancho Grande in Aragua State. The fact that it has never been recollected and that it was described from a cultivated plant several years after the collecting expedition (labels sometimes migrate in greenhouses) has been cause for concern. But as negative evidence (no further information about its distribution) is not a proof of anything, I consider it to be yet another rain forest mystery and hope that someday additional specimens will be discovered.

Because *N. cathcartii* was not illustrated when described, a photo and drawing of the clonotype plant are here included (figures 4-5). I also note that I have seen, in cultivation, compact and colorfully marked plants labeled as *N. cathcartii;* I doubt that these are correctly identified.

LITERATURE CITED

Leme, E.M.C. 1997. *Canistrum-Bromeliads of the Atlantic Forest. Salamandra Consultoria Editorial Ltda.* Rio de Janeiro, Brazil.

Ramirez, I.M. 1991. Systematic revision of *Neoregelia* subgenus *Mylaeaicum* (Bromeliaceae). Masters thesis, University of Missouri-St. Louis.

———1994. Notes on Neoregelia subgenus *Hylaeaicum* (Bromeliaceae:Bromelioideae). *Selbyana* 15(2): 82-83.

Reed, C.F. & R. W. Read. 1981. Two New Species of Bromeliads from Venezuela. J Bromeliad Soc. 31(2):59-60.

---

[1] A consensus is rapidly building that the subgenus *Hylaeaicum* is misplaced in *Neoregelia* (Leme, 1997, Ramirez, 1991, 1994) and that its closest relatives are elsewhere, perhaps in *Aechmea* s.l. The densely compound inflorescences of many of the Hylaeaicum species and their coriaceous bracts and sepals are similar to *Aechmea rodriguesiana* from the same general region.

Figure 4. Photo by Vern Sawyer.
A flowering plant of *N. cathcartii* at the Marie Selby Botanical Gardens where it has been cultivated since 1980.

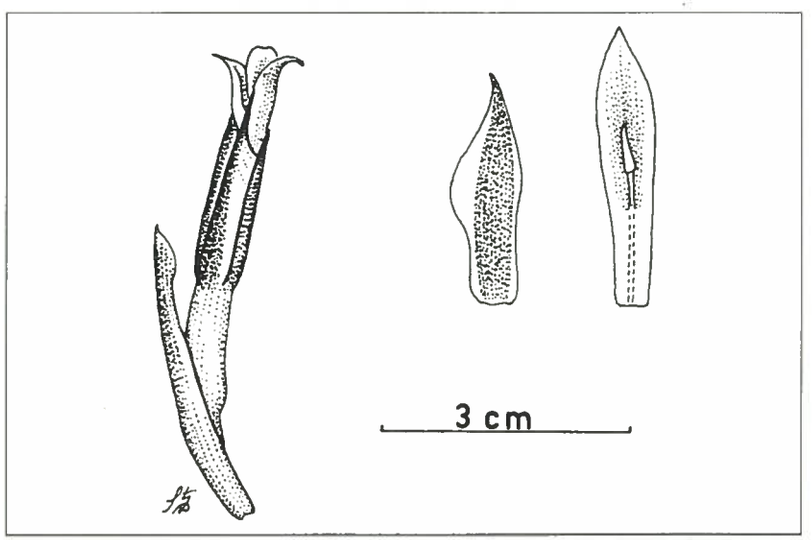


Figure 5. Drawing by Stig Dalström.
Neoregelia cathcartii. Floral bract and flower, flattened sepal and petal.

Food for Thought: An Alternative Judging Proposal

Bill Timm

I would like to propose a change in the system of judging that corrects several flaws in the way awards are presented today and I believe also provides other benefits at little additional cost.

First, let's examine the way things are currently done and the problems I see associated with the current approach.

Existing approach

All entries within each section of certain divisions which have earned "Awards of Merit" (95 or more points) are judged for "Best of Section" and are awarded suitable awards.

Each of the "Best of Section" winners within each division are then moved up to be judged at the divisional level. As they move up, they must vacate their "Best of Section" award and that, in turn, is given to the runner-up entry.

In a similar fashion, the "Best of Division" winners are judged for "Best in Show" (Horticultural or Artistic) and the winner(s) receives "Best in Show" awards. The "Best in Show" winner loses the "Best of Division" award when they move up in the judging process, and they had previously forfeited their "Best of Section" award.

I believe this arrangement has several flaws that need correction. Why should the "Best of Show" winners lose their hard-earned "Best of Division" and "Best of Section" awards after they were actually judged to be the best entry at both the sectional and divisional levels? Isn't there room for confusion to someone not familiar with the judging process as to where the "Best of Show" plant came from when it doesn't also have a "Best of Division" and "Best of Section" award as well?

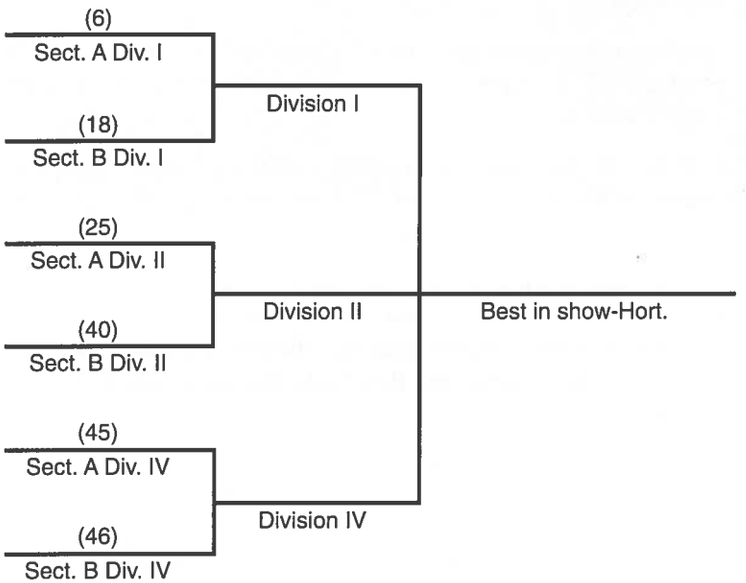
And why should the other "Best of Division" winners lose their hard-earned "Best of Section" awards? While it is certainly appropriate that the second best entry that was moved up to a vacated spot receive an award, should it be the same award bearing the same prestige as the other "Best of Section" and "Best of Division" entries? Is it fair that the second best entry in a section or a division be presented a "Best of Section" or "Best of Division" award?

I believe that the process illustrated in the following bracket diagrams fairly resolves this problem and I am proposing that it be adopted.

Stage 1. Sectional judging. (see bracket diagram 1)

At this step we would continue to judge the entries for "Best of Section" as they are currently being judged. In the illustrations following, the numbers in parentheses are used to represent hypothetical entries as they progress through the judging stages. In the bracket diagram below, there would be six "Best of Section" winners. (In the sample diagram below, they are entries #6, #18, #25, #40, #45 and #46. Each of these original sectional winners would receive a bronze medallion.

Bracket Diagram 1



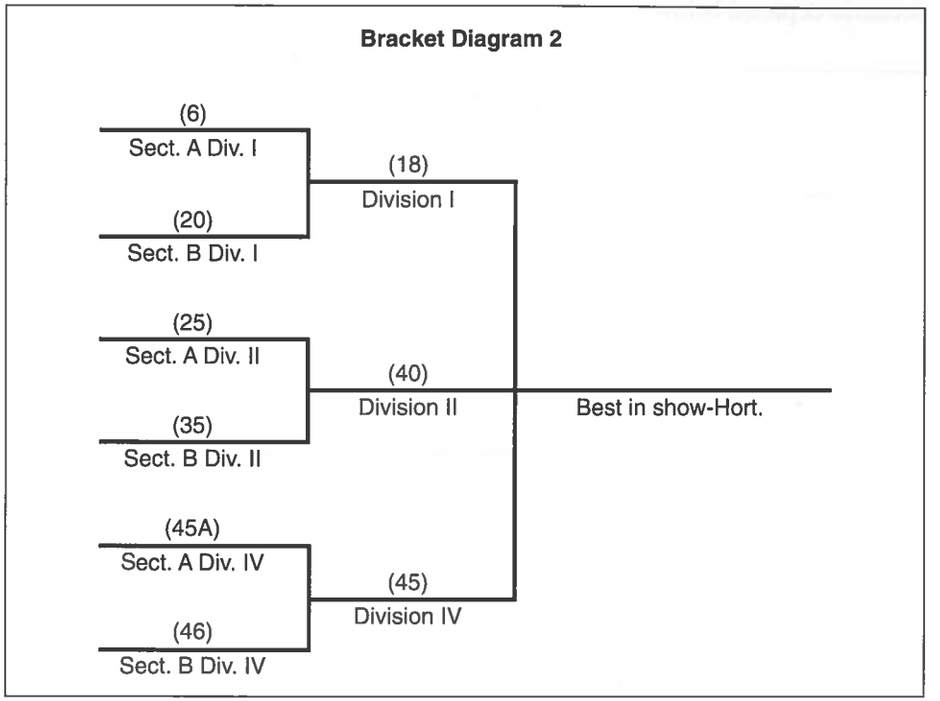
Stage 2. Divisional Judging (see bracket diagram 2)

For the next step, divisional judging, assume that Division I, entry #18 advances after winning section B of Division I. Assume also that Entries #40 and #45 won their respective "Best of Division" awards and they also advance to the next level of judging.

Entries #18, #40, and #45 would retain the "Best of Section" awards they had previously won in the sectional round of judging, and would now have also have won "Best of Division" awards as well. Filling their vacated sectional slots would be three "Reserve Winners", (in bracket diagram 2, they are shown as #20, #35, and #45A) which by virtue of their not truly having been section award winners, would receive a lesser award than that granted to the six true sectional

winners. Therefore in diagram 2, Entries #18, #40, and #45 have received both "Best of Section" and "Best of Division" awards, Entries #6, #25, and #46 would have won "Best of Section" awards, and Entries #20, #35, and #45A would have won "Reserve Winner" awards for the sectional level.

Bracket Diagram 2



Stage 3. Best in Show – Horticulture (bracket diagram 3).

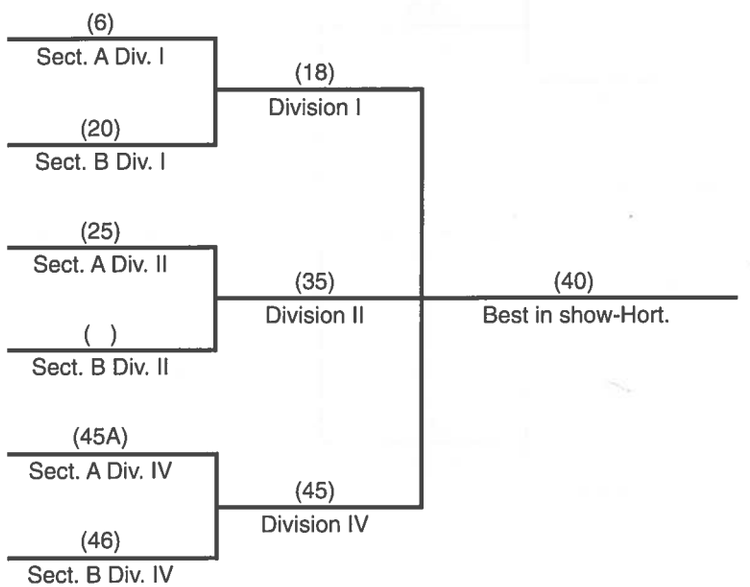
At this stage, the three division winners are judged and one advances to the "Best in Show" and is awarded a top award. In the following table, the hypothetical winner is the Division II entry, Entry #40. Entry #40 would keep the "Best of Division" award and move up to "Best in show."

The vacancy created in the Division II slot would be filled by competition between the "Best of Section" winner for Division II (#25) and the "Reserve Winner-Section" for Division II (#35). The winner would move up to the division award level, but receive a "ReserveWinner-Division" award, which would be a lesser award than the three "Best of Division" awards, but a greater award than the "Best of Section" award.

This would create another vacancy at the sectional level of Division II. Should the winner be the "Best of Section" winner, (in this case, entry #25), then entry #25 would move up to the divisional award level as "Reserve Winner-Division" and the slot vacated by them at the sectional level would be filled by

another "Reserve Winner-Section." On the other hand, should the winner of the competition between the two be the "Reserve Winner-Section" (in the sample below, entry #35), then they would move up to receive the "Reserve Winner-Division" award. Their slot at the section level would remain vacant (i.e., there would not be an additional "Reserve Winner-Section II) awarded. That is the scenario depicted below.

Bracket Diagram 3



Final standings

The Final standings and awards based on the scenario and hypothetical entries in diagram 3 would be as follows:

Best in Show: (40)	Gold Medallion (Best in Show), Silver Medallion (Best of Division II), and Bronze Medallion (Best of Section B, Division II)
	Rest of Division Awards
Division I Winner (18)	Silver medallion (Best of Division I) and bronze medallion (Best of Section B, Division I)
Division IV Winner (45)	Silver medallion (Best of Division IV) and bronze medallion. (Best of Section A, Division IV)

Division II Reserve Winner (35)	Gold rosette (Reserve Winner-Division II) and bicolor ribbon (for Reserve Winner-Section B, of Division II).
	Rest of Section Awards
Division I, Section A Winner (18)	Bronze medallion
Division I, Section B Reserve Winner (20)	Bicolor ribbon
Division II, Section A Winner (25)	Bronze medallion
Division II, Section B (vacated)	
Division IV, Section A Reserve Winner (45A)	Bicolor ribbon
Division IV, Section B Winner (46)	Bronze medallion

In short, in the examples above there would be 1 gold medallion, 3 silver medallions, 6 bronze medallions, 1 gold rosette, and 3 bicolor ribbons. Awards listed here are only examples and each society would, of course, choose their own awards. All awarded entries would also keep their "Awards of Merit."

This arrangement would be less confusing, provide a fairer approach to giving awards and would have the added benefit of allowing more entries on the head table at little additional cost.

2030 Laryl Ave., North Port, FL

Citing Internet Sources

Chet Blackburn

The amount of information available on the Internet relating to bromeliads is astonishing...and it is increasing daily. There are a surprising number of Web sites dedicated to bromeliads featuring all sorts of information (and misinformation as well) where images can be viewed, questions answered, organizations promoted, and plants and other products purchased from anywhere in the world without ever leaving home. Both scientists and hobbyists are busy posting and reading valuable information on various newsgroups and list servers such as BROM-L and the BSI Round Robin. This wealth of information has led to an increasing tendency by affiliates to reprint material found on the Internet in their monthly newsletters. In addition to the need to verify the accuracy of information used, the Internet source should be correctly cited.

The guidelines for citing electronic material is similar to that for citing material published in print, but the electronic material introduces factors that are not particularly relevant to printed documents and also tends to be in a constant state of flux. When citing a printed document, for example, there is little need to cite the date that the document was read by the person doing the citing. It does become important when quoting electronic material however, because data can so quickly and easily be changed. Web sites can, and frequently do, alter the content in their Web pages to include the latest information available.

The style guide provided below has been adapted by the U.C. Berkeley Teaching Library Internet Workshops and is the one that will be used by the *Journal of the Bromeliad Society* when quoting Internet sources. It is reproduced below for the benefit of affiliate newsletter editors and any other groups or individuals who may wish to use it when reproducing information from the internet.

WWW Sites (World Wide Web)

When citing information from Web sites, such as our own BSI.ORG, provide the following: author's name (if known), the full title of the work in quotation marks, the title of the complete work (if applicable) in italics, the document date (if known) or the date of the last revision (if different from the access date), protocol and address, access path or directories, and date of access. Samples follow:

O'Donnell, Hyacinth B. "The Biology of the Ugly Islands." *Background to the Ugly Islands.* 1997. http://www.ozemail.com.au/~macinnis/ugly/bacgrnd.htm (7 Jan. 1999)

Author unknown. "Hotel Information." 14th World Bromeliad Conference, the Golden Anniversary. 1999. http://bsi.org/WBC14/wbc14.hotel.htm (25 Feb 1999)

E-mail, Listserv, and Newsgroups

Give the author's name (or alias), the subject line from the posting in quotation marks, the date of the message (if different from the date accessed) and the address of the listserv or newslist, along with the date of access in parentheses. If the information is from a personal E-mailing, DO NOT include the E-mail address (unless the sender specifically requests that it be included).

1. Personal E-mail example:
   Chan, Bryan. "Annual Show for South Bay Bromeliad Associates." Personal E-mail (21 Feb 1999).
2. Brom-L list example:
   Murray, Craig D. "Two bloom spikes..."" brom-l@bdt.org.br (24 Feb 1999)
3. BSI round robin list example
   Bromman. "Re: [Fwd: Two bloom spikes...?" grow.rr@bsi.org (24 Feb 99).

Publications on CD-ROM, diskette, or magnetic tape

List the author's name, last name first, followed by the title of the article in quotation marks and the title of the publication in italics, any version or edition numbers, series name, if applicable, and the publication information, if available.

Zieger, Herman E. "Aldehyde." *The Software Toolwork Multimedia Encyclopedia.* Vers. 1.5 Software Toolworks. Boston: Grolier , 1992.

Style sheets also exist for FTP (File Transfer Protocol) sites, Telnet sites, Synchronous Communication sites (MOO's, MUDS, IRC, etc.) and GOPHER sites but are not included here because they are less likely to be sources for reprinting material in the *Journal* or in affiliate newsletters. The information is available online at
http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/MLAStyleSheet.htm.

REFERENCE

Walker, Janice R. "MLA Style Sheet for Citing Internet Resources: MLA Style" http://www.cas.usf.edu/english/walker/mla.html (17 Nov. 1998).

Auburn, California

CORRECTIONS:

Volume 49(1) page 14: In the second paragraph, the bigeneric name of × Neostropsis appeared as "× Neodstropsis". The correct spelling is × Neostropsis.

Page 2, and on pages 20, 22, and 23: I somehow managed to misspell the name of two long-time friends. The notations and captions identifying Pamela and Jim "Laever" should have been Pamela and Jim Leaver.

San Francisco WBC Innovations – Part I

Among innovations at the World Bromeliad Conference in San Francisco from June 26 through July 5, 2000, will be the use of bar coding, a taxonomist's conference, and a three-tiered fee structure.

Bar coding will be utilized in an effort to facilitate handling of sales of plants and other items in the plant sale area. It should also simplify after-sales distribution of money to vendors. Any registered BSI member may bring in plants to sell.

One of the most important innovations will be a Bromeliad Taxonomist's Conference that will provide a forum for the worlds leading bromeliad taxonomists to come together and share views and provide updates on their work. The conference is scheduled from 10 a.m. to 4 p.m. on Friday, June 30, and will consist of a number of thirty-minute presentations as well as an open exchange of ideas. While this session is not geared to the average hobbyist, all registrants to the WBC with an interest in taxonomy are invited to attend. The Taxonomy Conference will be hosted by Harry Luther, Director of the Mulford B. Foster Bromeliad Identification Center.

A three-level fee structure will apply to the San Francisco World Conference. The best buy is the conference registration fee that applies to the entire conference. The registration fee includes the right to attend all seminars, entrance to all activities including the judged show, plant sales, rare plant auction, cyber-coffee, world-wide show-and-tell the Sunday night banquet and other planned functions. It also entitles the registrant to any discounts that may be offered on items sold. This fee is $115 before January 1, 2000, $130 if paid before June 2, 2000, and $150 if paid after June 2 or if paid at the door.

For those unable to register for the entire conference, there will be two types of daily rates available. One will be a standard admission fee of $5.00 that will entitle individuals to attend the show and the plant sale only. This fee is aimed primarily at local people and other hotel guests who might want to see the show and sale, but who are not interested in participating in other activities. There will also be a daily seminar entrance fee of $35 available. This fee will entitle a person to not only attend the show and plant sale, but will also allow attendance at all seminars for that day. There will be up to six seminars per day.

Both daily fees are good for a only a single day, and do not include entrance to the Cyber-Coffee, banquet, bus tours, or qualify the holder for any discounts offered on sale items. — CHB

Journey to a Venezuelan Highland

Francisco Oliva-Esteve and Bruno Manara
Photographs by Francisco Oliva-Esteve

Between February 21 and 24, 1998, the authors traveled through the western states of Mérida and Tachira, Venezuela, to visit several Andean localities and obtain photographs of bromeliads in flower.

On the afternoon of February 21, we left Mérida, a town at 1,600 m elevation (5,280 feet) heading southwest toward the town of La Grita situated at 1,500 m (5,000 feet) and 170 km (102 miles) distant in the state of Tachira.

Driving through the valley of the Chama River toward Estanques (600 m), the vegetation consisted of extremely xerophytic plants with cacti being the dominant form of vegetation. Here we found *Bromelia chrysantha* along with thick colonies of the viviparous *Tillandsia flexuosa.* On nearby cliffs we recognized several patches of *T. funckiana,* whose apical leaves turn red in its blooming season. Power cables and transmission lines in all the towns we passed through were completely covered by *T. recurvata.* The flowers of the common Bucares Ceibos *(Erythrina poeppigiana)* looked like splashes of red paint splattered across the huge trees, which were also festooned with masses of Spanish moss *(Tillandsia usneoides).* Frequently adding to this mix were the peculiar towering inflorescences of *Tillandsia fendleri* jutting conspicuously above the branches (figure 7).

Climbing up the valley of the Mocoties River, which runs opposite to the Chama Valley, the vegetation became richer and more abundant. Although the area had been heavily altered by farming, cattle raising and fire, we found several species of bromeliads growing on remnant trees. *Tillandsia recurvata* and *T. biflora* are common enough, as well as are two forms of *Racinaea tetrantha;* one with an orange inflorescence (var. *aurantiaca*), and the other with a red inflorescence (var. *miniata*). *Vriesea tequendamae,* with its dark grey-purple leaves and orange pendant simple inflorescence bearing small green flowers, was also a familiar sight along the way.

Passing through Bailadores, the last town, we headed up to the Páramos, to look for *Greigia ocellata.* We were interested in finding it because it is so far known only from the original collection. However, It eluded us on this trip. Later we entered the deep narrow valley of La Grita. In the waning daylight, we were lucky enough to find two different pitcairnias growing in proximity. *P. meridensis,* has a long wine-red inflorescence, while the other, not yet identified, has a short scarlet-red inflorescence. We also found a dwarf *Tillandsia tovarensis* with a subsimple inflorescence 50 cm long and arching at the tip. The usual branched inflorescence in this species ranges between 1.80-2.50 m.

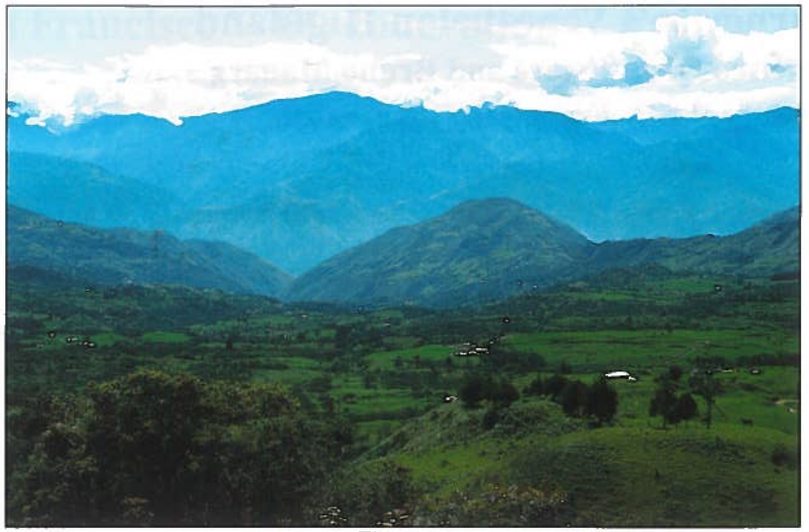


Figure 6.
The Andes near Mérida.

Figure 7.
Tillandsia fendleri with
Tillandsia usneioides.

On February 22, we left La Grita for the Páramos, which the road traverses at about 3,200 m. The road passes through a narrow valley, intensively devoted to farming corn, potatoes, onions, garlic, cabbage, sweet passion fruits and strawberries. However, on relict trees, *Vriesea tequendamae, Tillandsia fendleri, T. biflora,* and *T. longifolia* could still be observed.

From 2400 m up, original forests remain. Here we found a medium sized and probably undescribed species of *Tillandsia,* with a thin, much-branched inflorescence and leaves that are reddish below. Above 3,000 m, in thick páramo dwarf forest, we found *Tillandsia seemanii,* with its showy red arching inflorescence, *Racinaea tetrantha* var. *miniata* (figure 8), and *T. complanata,* along with several sterile individuals of a *Greigia,* probably *G. columbiana.*

Figure 8.
Racinaea tetrantha var. *miniata.*

After reaching the top of the Páramo, we entered a valley leading down to San José de Bolivar, a small village of Indian origin. On this side of the mountain, we found: *Guzmania squarrosa, G. mitis, tillandsia compacta* var. *intermedia, T. denudata, T. longifolia,* and a form of *Tillandsia fendleri* with a red stem and light green nodding spikes. We also found a huge *Tillandsia* with an inflorescence more than 2 m long, known locally as"maya". *Pitcairnia brevicalycina* (front cover), with its white flowers, was frequent along roadsides. So were *Tillandsia schultzei, T. tenuispica* and *T. juncea* all easily recognizable in nearby trees.

From San José de Bolivar to Queniquea, another village of Indian origin, nothing new was spotted other than *Puya floccosa,* which was growing in the steep rocks along the road.

The following morning, February 23, we reached Zumbador, which was at first enveloped in clouds, but soon began to clear up. Amidst the bushy vegetation at 3,000 m, we came across large communities of *Greigia columbiana,* individuals of *Guzmania squarrosa,* not previously reported from there, or for that matter, never previously reported as being found so high above sea level. Further on, in a small, protected, shallow valley, we found growing among the stout grasses and shrubs, a healthy colony of *Puya aristeguietae* in late bloom, its sturdy stems rising more than 2 m high and bearing showy cream-colored flowers. On top of the páramo, at 3,320 m, growing among the frequent, thin-leafed and ball-like *Espeletia jahnii* and another small rosulate *Espeletia* with humble lateral inflorescences, we found several *Puya trianae,* with dense wooly bracts and glaucous-blue flowers.

On the way back to Mérida, we spotted: *Tillandsia variabilis* and *T. utriculata* – and particularly took note of one individual with a rose-purplish stem more than 2 m long (the normal length is 1 m).

On February 24 we drove around Mérida and added *Tillandsia myriantha, T. tenuispica, Guzmania monostachia, Pitcairnia nubigena,* and were especially thrilled at adding a beautiful and healthy *Vriesea robusta* to our list of discoveries.

On the 4-day trip, we managed to spot approximately 35 different bromeliads, 26 of which were tillandsias. We also observed that all the populations looked well established. Therefore, although this area is heavily altered by human activities which so drastically modified the natural habitat, none of the bromeliads observed seems specifically endangered, since enough trees and forested areas remain to allow them to safely live and reproduce for the time being.

Caracas, Venezuela

Trichomes- an Underutilized Taxonomic Tool

Demetria Mondragón[1] and Felipe Barredo[1]
Photographs by Demetria Mondragón

All bromeliad enthusiasts have problems identifying immature plants, or even on occasion, plants with flowers, due to the similar appearance of many species.

Obvious features such as leaf characteristics, floral structures, shape of the inflorescence and seed features are frequently used, as clues to identify the species. Less obvious, however, are tiny hairs present on the leaves of most members of Bromeliaceae. These hairs are called peltate trichomes or *trichopomps.*

A bromeliad trichome is composed of a stalk and a shield. There is a range of complexity in the shape and function of trichomes among the three Bromeliaceae subfamilies. The simplest type is found in the Pitcairnioideae, more complex trichomes are present in the Bromelioideae, but complexity of trichome structure and function peak in the Tillandsioideae.

The trichomes of Tillandsioideae are most rich in taxonomic features. Tomlinson (1969) and Gardner (1982) suggest that the number of stalk cells, number of rings, number of wing cells, symmetry of the wings, and degree of ornamentation (invagination of the cell walls) of the wing can be used to differentiate among species.

Most of these features are easily viewed with an optical microscope. An easy way to prepare trichomes for viewing is to cut a 5 mm square from the middle section of one of the leaves and press it between 2 layers of paper towels. Transparent adhesive tape should then be firmly applied to the lower surface of the excised leaf and carefully peeled off. This removes most of the trichomes and the tape can then be re-applied to a microscope slide for examination. It is always important to take the same section of the leaves, because differences in the shape, size and density of the trichomes could exist in different parts of the same leaf.

During my internship at the Marie Selby Botanical Gardens, I examined the trichomes of three *Tillandsia* species. The degree of wing cell ornamentation was found to differ among *Tillandsia brachycaulos, Tillandsia abdita* and *Tillandsia capitata*—all closely related species. *Tillandsia brachycaulos* (figure 9) possesses very ornamented wing cells, while *T. capitata* (figure 10) lacks ornamentation. *Tillandsia abdita* (figure 11) was found to have more ornamentation than *T. capitata,* yet was not as highly ornamented as *T. brachycaulos.* Meticulous examination is required to distinguish between *T. abdita* and *T. capitata* samples. Previous work by Gardner (1986) has distinguished between two easily confused

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Figure 9.
Tillandsia brachycaulos trichome wing cells (20x)

Figure 10.
Wing cells of *Tillandsia capitata* (20x)

Figure 11.
Wing cells of *Tillandsia abdita* (20x)

species: *Tillandsia utriculata* and *Tillandsia karwinskyana;* the former has wing ornamentation, the latter does not.

Trichome density, size of trichome, and the number of wing cells, could vary among individuals collected from different localities. These differences could be the result of variation in climate and exposure to sun among sites (Benzing pers. comm).

As with other approaches, trichomes must be used in conjunction with other features when attempts at identification of specimens are made.

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We wish to thank Ivón Ramirez, Harry Luther, Bruce Holst, Meg Lowman, Raúl Rivero, the Marie Selby Botanical Gardens, the Bromeliad Society International, the Smithsonian Institution Herbarium and Sheeba Sreenivasan.

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Mérida, Yucatan, México

In Vitro Morphogenesis of Immature Flower and Buds of Flower Stalk in *Dyckia distachya*

Marcos M. Daquinta,[1] Adelar Almeida,[2] Miguel Pedro Guerra[3]

Abstract

The purpose of this study was to develop a method for vegetative propagation of *Dyckia distachya* through tissue culture. Buds from young inflorescences were used as the explant source. For callus induction different concentrations of auxins were evaluated. Callus was induced on most of the inflorescence tissue with higher concentrations of growth regulators.

Introduction:

Bromeliads are divided into three subfamilies, the Pitcairnioideae being considered the most primitive among them. This subfamily contains genera such *Puya, Dyckia,* and *Pitcairnia* (Mercier; and Kerbauy, 1997). Almost all species belonging to this group of plants are terrestrial or saxicolous and many of them are being grown increasingly for use as ornamental plants.

Bromeliad plants can be propagated through sexual and asexual processes. However, sexual propagation has some disadvantages, one being the limited availability of seed. On the other hand, asexual reproduction is incapable of producing the quantities of plants needed in commercial nurseries.

Some species of Bromeliaceae have been propagated with the application of growth regulators; for example *Aechmea fasciata* using Paclobutrazol and Chlormequat (Ziv *et al,* 1986) and in species of the genus *Tillandsia* using the cytokinin BAP (Bessler, 1997).

Micropropagation of bromeliads is in high demand because of the superior quality of the plantlets produced when compared to seedlings, programmable flowering, and uniformity of plant material. However it is more difficult to establish bromeliad cultures from shoot axillary buds excised from adult plants.

The aim of this study was to evaluate whether the buds from bromeliad inflorescences had potential as a more efficient method for clonal propagation.

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[3] Centro de Ciencias Agrarias. Universidad Federal de Santa Catarina, Caixa Postal 476. CEP 88.049. Florianópolis. Santa Catarina, Brazil.

Materials and Methods

The inflorescences, arising from the upper leaves, were surface sterilized by immersing them for 1 minute in alcohol at 70% (v/v) and following with 20 min in a 1% (v/v) sodium hypochlorite solution and three rinses in autoclaved distilled water.

After disinfecting the outermost leaves were carefully removed under sterile conditions and discarded. The bud of the stalk flower and immature flower were sliced into 1 to 2 mm sections along with a portion of basal tissue and inoculated onto a MS medium (Murashige and Skoog, 1962), supplemented with auxin (ANA, Picloram), cytokinin (BAP) and giberellins (GA3).

The medium pH was adjusted at 5.6 to 5.8 by adding sodium hydroxide prior to adding agar and then sterilized in an autoclave at 121°C and 1.2 kg/cm2 for 15 minutes. Explants were cultured in a growth chamber at 25± 2° C under illumination.

Results and Discussion

Many publications have pointed out that it is difficult to establish bromeliad cultures from shoot tips and axillary buds excised from fields of adult plants. However in this study, buds of stalk flowers were utilized effectively, and with disinfection growth was rapid.

Ichihashi (1992) noted that when working with cultured lateral buds of young flower stalks of *Phalaenopsis* only 2 of 544 cultured buds became contaminated. As has been reported for many bromeliads, the bud response is very slow. However buds from inflorescences of *Dyckia distachya* proved to be different with the first sign of response (bud swelling) becoming evident after three days. When buds were cultured in a liquid medium with a reduced auxin concentration, the development increased and produced more defined green structures, ensuring growth (figure 12). However when the buds were cultured in a liquid medium with gibberellins *in vitro* flowering was achieved (figure 13). When nodal cuttings from senescent flower stalks of *Phalaenopsis* hybrids were cultured on modified MS media, three different responses were observed; no growth, vegetative growth, and reproductive growth (Jiménez y Guevara,1996). Duan and Yazawa (1995), after subculturing adventitious shoots formed from nodal sections of floral stalks of *Phalaenopsis* on Vacin-Went medium with BA, more than 70% of shoots formed floral buds.

Figure 14 shows the callus formation from immature newer sections on medium with Picloram. The results show that auxin, at the level selected, promoted callus formation on immature flowers of *Dyckia distachya.* After one month of incubation in the dark, calli were white to pale yellow in color and had a hard consistency.

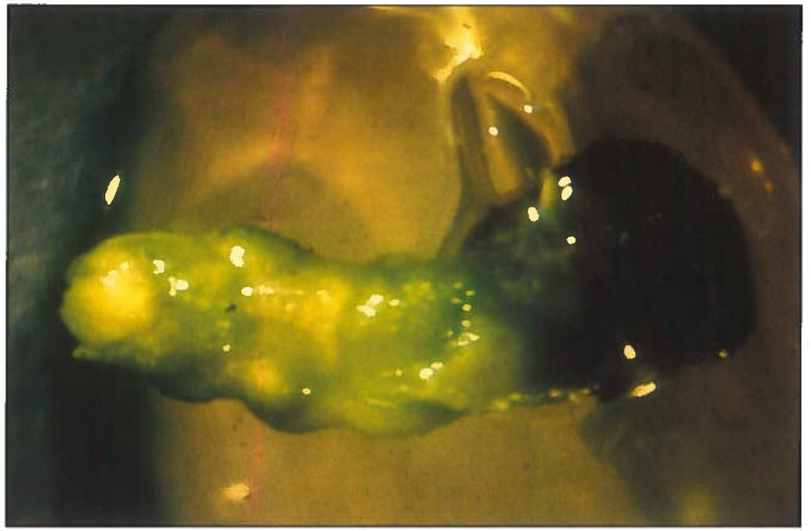

Figure 12.
Shoot from bud of floral stalks.

Although several tissues from mature donor plants have been used as starting explants of reliable protocols for bromeliad plant regeneration, immature flowers represent an important explant source for somatic embryogenesis of oil and coconut palm trees (Texeira *et al.,* 1994; Verdeil *et al* 1994).

This work with buds from flower stalks of *Dyckia distachya* implies that other bromeliads may be similarly propagated by this explant in tissue culture. The results presented here have demonstrated that callus can be induced and multiplied from immature flower explants of *Dyckia distachya.* Success in callus initiation was likely due to the use of very young flowers and the presence of suitable concentrations of auxin.

Similar results were achieved from male and female inflorescences, although male inflorescences have been responsive to all concentrations of auxins. Female inflorescences have been responsive only to higher levels of these plant growth regulators.

Micropropagation should find a ready application in the ornamental bromeliad industries as well as in the production of desirable hybrids of ornamental bromeliads.

Only micropropagation techniques will permit rapid development in sufficient numbers of *Dyckia.* Vegetative multiplication of individuals remains a promising possibility for the production of homogeneous plant material as well as for substantial improvement in plant homogeneity.

Figure 13.
In vitro flower from buds of floral stalks.

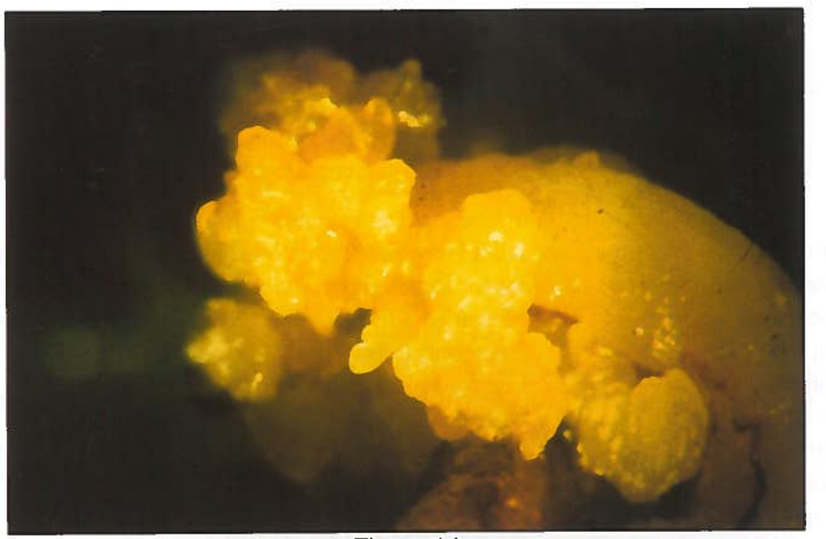

Figure 14.
Callus formation from immature flower sections.

ACKNOWLEDGMENT

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Welcome New Members

The following individuals joined the Bromeliad Society International in November and December, 1998. The BSI welcomes them aboard and thanks them for their support.

Lynne Bobb-Koths
Allon Canaan
Rosemary Christie
John Coulthard
Cynthia De Blasio
Ken Denham
Gary Dworkin
Richard Fateman
Kevin Gustavson
Evelyn Hallowel
Alan Herndon
Susan Inglehart
Masahiro Kuroda
Raymond Lemieux
Leopoldo Leon
Norma Maatz
Clyde McLeod
Larry Rahme
George Singleton
James Standsor
Salvador Trabanino
Cherry Violette
Greg Walleigh
Laura Weickert
David Welch
Herbert Wolfe
Thor Youngblood
Hideki Yokozeki

A White Form of *Aechmea aquilega*

Francisco Oliva-Esteve

At the National Exposition of Bromeliads, held in Caracas on April 18th through 20th, 1997, a young lady brought in a white-flowered specimen of *Aechmea aquilega* (Salisbury) Grisebach in to the show. To my knowledge, a white-flowered specimen had never been seen before. Elsa Monteverde de Baasch, a bromeliad enthusiast, collected the plant in 1990 near sea level in a dry coastal town named Tucacas, in Carabobo State. The species is more abundant however in Higuerote (Barlovento) about 100 KM from Caracas in Miranda State, where it grows by the thousands. It can be found scattered all along the Venezuelan coast from 10 to 300 m elevation, including Margarita Island.

In Barlovento there is an enormous cocoa plantation with huge old shade trees covered with orchids, aroids, bromeliads and other epiphytes. Included among the bromeliads are: *Aechmea aquilega var. aquilega* (red form) which is the most common, followed by *A. lingulata, A. nudicaulis, Guzmania monostachia, Tillandsia elongata var. subimbricata, T. juncea, T. fasciculata, V. procera var. rubra, V. splendens var. splendens, V. splendens var. formosa,* and *V. heliconioides.*

***Aechmea aquilega* forma *alba* Oliva-Esteve, forma nov.** (figure 17).

A A. *aquilega* cui affinis, bracteis scapo cui albis, decoris recedit.

Type. Venezuela: CARABOBO: Tucacas. 20 m alt., Sept.1990. Grown in cultivation by its discoverer, *Sra. Elsa de Baasch* of Valencia, Venezuela s.n.(Holotype: VEN).

In this form the entire scape is white, including the primary bracts; the inflorescence has spreading branches terminating in stout heads, both the red and white flowering forms are covered with a whitish mucilaginous substance. The floral bracts are yellow-cream, acute and coriaceous; petals small, ligulate, yellow.

This form is very ornamental and could achieve a conspicuous contrast planted in conjunction with the other color forms.

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Caracas, Venezuela

[Ed Note: This article provides additional information and a formal name for a

Figure 15.
Aechmea aquilega, the red form is more common.

Figure 16.
The red form of *Aechmea aquilega* growing in a park in Caracas at an elevation of approximately 1000 meters.

Figure 17.
Aechmea aquilega forma *alba*.

Figure 18.
Aechmea aquilega forma *alba* in a dry forest near the sea growing at an elevation of 20–30 meters.

plant that was the subject of an article by Ana Rousse in volume 48, issue number 5 of the Journal. Both articles were received at about the same time and it would have been preferable to either combine the two or to have printed them simultaneously. It is our policy however, that all papers of a scientific nature must go through review by the appropriate members of the Editorial Review Board. Because there were taxonomic questions involved, this article by Sr. Oliva-Esteve was subject to review by a member of the Editorial Review Board. When the taxonomic issue was cleared up, the article was returned to the editor's desk, where it managed to get lost in the shuffle of circumstances that has caused the last few issues of the Journal to be late in delivery. I thank Sr. Oliva-Esteve for providing the name and additional information on this plant, and for his patience for the length of time it has taken to get it in print...CHB]

Contributions to the BSI

We would like to thank the following individuals and organizations for contributions made recently to the BSI, the Bromeliad Journal color fund, or the Mulford B. Foster Bromeliad Identification Center.

John Arden
John Atlee
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Bromeliad Soc. of Broward Co.
Bromeliad Soc. of Central Florida
Patricia Bullis
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Catherine Campbell
Ramon Cantero
Robert Collis
Mark Dimmitt
Roberta Fine
William Fishbuene
Florida West Coast Brom. Soc.
Robert Germer
Grace Goode
Mel Grice
Willard Hartman
Alexander Holmes, Jr.
Dale Kammerlohr
Thomas Lakers
Roger Lane
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Hatsumi Maertz
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Ervin Wurthmann

Temporal Variation in Herbivory of a Peruvian Bromeliad

Margaret Lowman[1], Michael Brown[2], Arthur Desrosiers[2], and D.C. Randle[2]

Herbivory in bromeliads in forest canopies is reportedly rare (Benzing 1990). It is not known, however, whether this is due to the toughness of the foliage; the below-average nutritive qualities of the foliage; their mutualistic relationships with protective insects such as ants (that may ward off herbivores); the relative paucity of herbivores in tree crowns; or perhaps the logistic difficulties of accessing canopy bromeliads to measure them. All of these hypothesized explanations require extensive field data collection to reject or accept, and none have been studied to date.

Over the past ten years, canopy access techniques have been developed that solve the logistic challenges of canopy access (Lowman and Nadkarni 1995, Lowman and Wittman 1996). One of these techniques is the construction of canopy bridges and platforms so that researchers and visitors can walk through the treetops with ease (Lowman and Bouricius 1995). One such structure was built along the Amazon River in Peru by a consortium of institutions called ACEER (Amazon Center for Environmental Education and Research). This walkway extends over 400 meters in length and rises into the canopy at a height of up to 30 meters.

During 1995, the ACEER canopy walkway was used to make the first measurements of bromeliad herbivory in tropical forest canopies (Lowman, Wittman, and Murray 1996). The average leaf surface area loss to herbivores was 10.4%, which was significantly higher than the negligible amounts that had been predicted in the literature. We wondered if this were the result of an unusual insect outbreak event, or if such levels were incurred by the bromeliads each year. In order to test our hypothesis, we re-measured the same bromeliad population two years later, in 1997, to compare the levels of herbivory to our first measurements and to see whether herbivory had returned to a negligible level.

We re-sampled the same population of *Aechmea nallyi* L.B. Smith, a relatively rare epiphyte found only in patches of rain forest within the northeast corner of Peru (Luther, personal communication). This plant grows as a rosette of sclerophyllous leaves, and produces a brilliant pink and yellow inflorescence from March to May. Along the ACEER walkway, this species is relatively common and easy to measure (Figure 19). We used the same field methods in 1997 as in 1995, making visual estimates of the leaf area lost on 10 leaves of

[1] Director of Research and Conservation, The Marie Selby Botanical Gardens
[2] Research volunteer, The Marie Selby Botanical Gardens

Table 1.
Herbivory (% leaf area mined or missing) of *Aechmea nallyi* 1997

	PLANT						
LEAF	(1)	(2)	(3)	(4)	(5)		
1	7	20	5	5	4		
2	6	12	6	10	6		
3	8	8	4	12	12		
4	4	15	5	8	5		
5	6	20	3	15	8		
6	5	11	6	20	12		
7	4	8	8	9	8		
8	10	8	10	25	9		
9	9	12	8	4	8		
10	8	15	4	5	10		
MEAN	6.7	12.9	5.9	11.3	8.2	**GRAND MEAN**	9.0

each of five plants within close proximity to the walkway.

Herbivory in 1997 averaged 9.0% (see Table 1) which was almost identical to the 10.4% leaf area losses measured in 1995. Herbivory ranged from 5.9% to 12.9% for individual plants, which was similar to the range of 5.3% to 17.3% recorded in 1995. It would appear that this bromeliad species suffers moderate amounts of foliage loss to insects each year, and the damage recorded in 1995 was not simply an unusual outbreak event as hypothesized. Herbivory of the surrounding canopy trees averaged 5.9% (Lowman, unpublished data), so the bromeliads suffered nearly twice as much leaf damage as their host plants.

We hope to expand our study to survey herbivory in other species of bromeliads, in order to determine whether or not these moderate levels of leaf damage are characteristic of bromeliad-herbivore interactions in tropical rain forest canopies.

ACKNOWLEDGMENTS

We are grateful to the ACEER for providing canopy access in Peru, and to International Expeditions for organizing the logistics of our visit. We also thank Harry Luther for editing our manuscript, and Ellen Baskerville for technical assistance.

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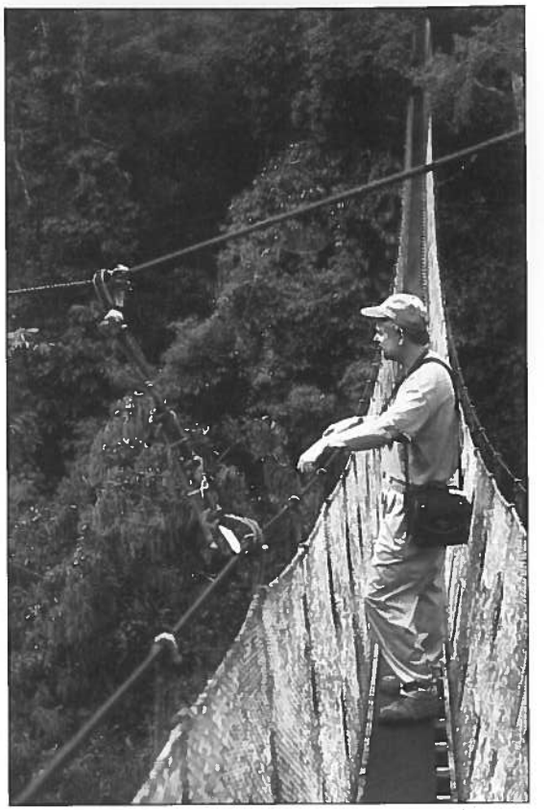

Photograph by Meg Lowman

Figure 19.
The ACEER walkway in Peru provides access to the bromeliads for measurement of herbivory.

Marie Selby Botanical Gardens

Sarasota, Florida

Tips on Growing Dyckias

Martha Goode

The majority of the members of the genus *Dyckia* are indigenous to central Brazil and parts of Argentina where they grow mostly in rocky, sunny areas. Some of the smaller varieties form large clumps. The species all have stiff, spiny-edged leaves, the undersides of which are covered with silvery scales.

Flowers range in color from yellow to orange and are borne on tall slender stalks that occur laterally rather than from the plant center as in most bromeliads. They all have extensive root systems (unlike most bromeliads) and should be potted in large containers.

They resemble agaves in appearance, and can withstand some drought and neglect, (our kind of plants!) though they thrive with normal watering. A tip for watering is to save the water whenever you boil eggs and pour this on them. The calcium is helpful to your dyckias.

Be sure to wear gloves when repotting or they will get you. They are well-armed with spines. They all need good light and drainage. Otherwise they are not demanding in their requirements.

Anyone who grows cacti and other succulents should try growing dyckias. The same is true, of course, of anyone who grows bromeliads.

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Chicago, Illinois

Reprinted in part from THE BSGC NEWS, the newsletter of the Bromeliad Society of Greater Chicago, March 1999.

Errata to the Alphabetical List of Bromeliad Binomials[1]

Harry E. Luther

Several of the recipients of the Bromeliad Society's "Alphabetical List of Bromeliad Binomials", Edition VI, published in July 1998 were kind enough to advise of certain errors in that list. The following corrections should be incorporated :

Species No.	Correction	Genus/Species/Author/Synonym
1. 40-0	Delete listing	***Aechmea burchellii*
2. 40-0	Delete listing	***Aechmea edmondstonei*
3. 40-41	Add listing	*Aechmea longicuspis* Baker
4. 40-143.1	Change number	at *Aechmea pseudonudicaulis* from: 143.1 to: 104.2
5. 42-3	Change line	at *Billbergia amoena:* **from:** "**d var. rubra = *Billbergia amoena*" **to:** "**d var. rubra = *Billbergia amoena var. amoena*"
6. 42-50.1	Delete listing	***Billbergia nobilis = Billbergia porteana*
7. 42-26	Modify syn.	at *Billbergia pyramidalis* var. *vernicosa:* **from:** "**c var. *vernicosa = Billbergia pyramidalis*" to:"**c var. *vernicosa = Billbergia pyramidalis* var. *pyramidalis*"
8. 42-19	Change line	at *Billbergia tweedieana:* **from** "**c var. *minor = Billbergia tweedieana*" **to:** "**c var. *minor = Billbergia tweedieana var.\ tweedieana*"
9. 31-8	Delete listing	at *Bromelia balansae:* "b var. *tricolor* Hort. ex M.B.Foster"
10. 36-0	Synonymize	at ***Canistrum lindenii:* **from:** "d var. *pehnkii*" to" "**d var. *pehnkii = Edmundoa lindenii* var. *lindenii*"
11. 27-9b	Add listing	at *Cryptanthus bromelioides:* "b var. *tricolor* M.B. Foster"
12. 3-6.2	Correct spelling	**from:** *"Fosterella vesquezii"* **to:** *"Fosterella vasquezii"*

[1] Harry E. Luther & Edna Sieff. An Alphabetical List of Bromeliad Binomials. BSI. 6th Ed. July 1998

13.	29-2	Add listing	*Greigia amazonica* L.B. Smith
14.	16-0	Delete listing	***Guzmania columnaris*
15.	16-60.01	Change number	at ***Guzmania pliosticha* (excl. type) = *Guzmania altsonii:* **from:** 16-60.01 **to:** 16-0
16.	38-0	Delete listing	***Hohenbergia billbergioides* = *Canistropsis billbergioides*
17.	26-58.4	Change number	at *Neoregelia brigadeirensis:* from 26-58.4 to 26-110
18.	26-58.3	Change number	at *Neoregelia brownii:* from 26-58.3 to 26-108
19.	26-22	Add listing	at *Neoregelia carolinae:* "ii forma *tricolor* (M.B. Foster) M.B. Foster ex L.B.Smith"
20.	26-101	Correct author	at *Neoregelia leucophoea:* **from:** "*Neoregelia leucophoea* Baker" **to:** "*Neoregelia leucophoea* (Baker) L.B.Smith
21.	26-100	Correct author	at *Neoregelia longisepala:* **from:** "***Neoregelia longisepala* E.Pereira & Leme" **to:** "*Neoregelia longisepala* E.Pereira & Penna"
22.	26-103	Change number	at *Neoregelia rubrovittata,* from 26-58.2 to 26-103
23.	28-2	Add listing	at *Nidularium microps:* **a var. *microps* = *Canistropsis microps* forma *microps*
24.	28-2	Correct syn.	at *Nidularium microps:* **from:** "**b var. *bicense* = *Nidularium microps* f. *bicense*" **to:** "**b var. *bicense* = *Canistropsis microps* f. *bicensis*"
25.	28-2	Correct syn.	at *Nidularium microps:* **from:** "**c var. *pallidum* = *Nidularium microps* f. *pallidum*" **to:** "**c var. *pallidum* = *Canistropsis microps* f. *pallida*"
26.	28-18	Remove syn.	at *Nidularium terminale:* **from:** "***Nidularium terminale* = *Canistropsis billbergioides...*" to: "*Nidularium terminale* Ule"

27.	34-16	Add listing	at *Orthophytum disjunctum:* "b var. *minor* L.B.Smith"
28.	8-0	Add listing	***Pitcairnia leopoldii* = *Pepinia leopoldii*
29.	8-172.1	Spelling/author	at *Pitcairnia simulans:* **from:** *"Pitcairnia simulan"* to: "*Pitcairnia simulans* H.Luther"
30.	44-5	Insert line	following "*Portea leptantha* Harms", **insert new line:** "44-5 *Portea petropolitana* L.B.Smith" (Var. *extensa* and var. *noettigii* are varieties of *P. petropolitana,* not of *P. leptantha.*)
31.	21-8.1	Delete listing	*Ronnbergia marantoides* = *Lymania marantoides*
32.	23-0	Delete listing	*Streptocalyx subnuda* = *Aechmea woronowii*
33.	14-325.01	Change number	at ***Tillandsia circinnata* (of hort.) = *Tillandsia paucifolia:* **from:** 14-325.01 **to:** 14-0
34.	14-282	Change name	at "*Tillandsia fasciculata:* **from:** "**g var. *floridana* = *Tillandsia floridana*" **to:** "**g var. *floridana* = *Tillandsia x floridana*"
35.	14-288	Add listing	at *Tillandsia flabellata:* "b var. *viridifolia* M.B.Foster"
36.	14-266	Add syn.	at *Tillandsia intumescens:* **from:** "b var. *brevilamina* L.B.Smith" **to:** "**b var. *brevilamina* = *Tillandsia langlasseana*"
37.	14-216.1	Remove syn.	at *Tillandsia mandonii:* **from:** "***Tillandsia mandonii* = *Tillandsia myosura*" **to:** "*Tillandsia mandonii* E.Morren ex Mez"
38.	14-37.01	Change number	at ***Tillandsia maxima* Strangeway = *Aechmea serrata* **from:** 14-37.01 **to:** 14-0
39.	14-170.01	Change number	at ***Tillandsia meridionalis* sensu L.B.Smith ..." **from:** 14-170.01 **to:** 14-0
40.	14-174.01	Change number	at ***Tillandsia rosea* sensu L.B.Smith ..." **from:** 14-174.01 **to:** 14-0

41.	14-275	Add syn.	at *Tillandsia tricolor* var. *picta:* **from:** "c var. *picta* L.B.Smith **to:** "**c var. picta = *Tillandsia tricolor* var. *tricolor*"
42.	14-0	Delete listing	*Tillandsia x victorianoi* H.Luther
43.	0-0	Delete listing	*Tofieldia rupestris* Gleason
44.	15-203.1	Correct spelling	**from:** *Vriesea bleheri* **to:** *Vriesea bleherae*

Marie Selby Botanical Gardens, Sarasota, FL

Book Review

Jason R. Grant

Flora of the Guianas. Series A: Phanerogams, Fascicle 3. 189. Bromeliaceae Subfamily Tillandsioideae. Gouda, E. 1987. Koenigstein: Koeltz Scient6ic Books. 112 pages, son cover, 23 cm, ISBN 3-87429-273-8. Order from: Koeltz Scientific Books, P.O. Box 1360, D-61453 Koenigstein, Germany. Tel.: (+49) 0617493720, fax (+049) 06174937240, web site: http://www.koeltz.com.

This handsome soft-bound fascicle is the first of the planned three-part treatment of the Bromeliaceae for the Guianas (Guyana, Suriname, and French Guiana). This fascicle treats the subfamily Tillandsioideae generally following the genera of Smith & Downs (Flora Neotropica 1977). There are lengthy descriptions of the genera and species, remarks on distribution of each taxon within the flora area, and often comments on their culture and use. A very useful tool for anyone interested in the flora of the Guianas is Gouda's citation of the specimens he examined. These are all listed towards the end of the booklet in the same manner as Smith in his Flora Neotropica monographs.

Several new combinations are made, and a number of taxa were reduced to synonymy. Those placed into synonymy are as follows: *Guzmania lingulata* var. *minor* (*G. lingulata*), *G. lingulata* var. *splendens* (= *G. lingulata*), *G. venamensis* (= *G. sphaeroidea*), *Tillandsia archeri* (= *T. turneri*), *T. tenuifolia* var. *surinamensis* (= *T. tenuifolia*), and Vriesea pachychlamys (= *V. gladioliflora*). The new combinations are: *Tillandsia spiculosa* Grisebach var. *stenoglossa* (L.B. Smith) Gouda [= *Tillandsia stenoglossa* L.B. Smith], *Tillandsia tetrantha* Ruiz & Pavon var. *caribaea* (L.B. Smith) Gouda [= *Tillandsia caribaea* L.B. Smith], *Vriesea duidae* (L.B. Smith) Gouda [Tillandsia duidae L.B. Smith], and Vriesea pleiosticha (Grisebach) Gouda [= *Tillandsia pleiosticha* Grisebach]. A new lectotype is also selected for *Tillandsia usneoides* (L.) L.

There are 26 color photos, and a pull-out map of the Guianas. This is very useful flora and is recommended for anyone interested in the flora of the Guianas.

Golden Anniversary

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Another new colorful *Neoregelia*

Neoregelia 'Goode for Grace' is one of many outstanding new neoregelias introduced in recent years. This cross between *Neoregelia* [(*carolinae* × *concentrica*) × 'Royal Burgundy'] was made by R.L. Frasier. (See text on page 54).

Photograph by Ellen Baskerville

Calendar

20-21 Mar	The Bromeliad Society of Broward County will sponsor a standard show with commercial and members sales at the Historic Old Davie School, (located 25 miles north of Miami), 6650 Griffith Road, Davie, FL. 33314. Hours are 9 a.m. to 5 p.m. on Saturday and 11 a.m. to 4 p.m. on Sunday. Contact: Ann Schandelmayer at 954-583-1124.
26-28 Mar	The Bromeliad Guild of Tampa Bay will hold its annual show and sale at the Tampa Garden Center, 2629 Bayshore Blvd., in Tampa Florida. Hours are 2 to 5 p.m. on Friday, and 9 a.m. to 5 p.m. on Saturday and Sunday. Contact: Carol Wolfe (813) 961-1476.
16-18 Apr	The Sarasota Bromeliad Society will hold its annual show and sale at the Marie Selby Botanical Gardens in Sarasota Florida.
7-9 May	Bromeliad Society of Central Florida's 24th Annual Show & Sale will be held at the Florida Mall in South Orlando (Sandlake Rd. & Hgwy 441) during normal mall hours. Admission is free. Contact: Eloise Beach: 407-886-8892
16-17 May	Greater New Orleans Bromeliad Society will hold its 27th annual Bromeliad Show at Lakeside Mall in Metaire, La. Show and sale hours are 1 to 6 p.m. May 16 and 10 a.m. to 4 p.m. on the 17th. Contact: Carol Hertz (504)-486-8190