

# ***Journal of The Bromeliad Society***



VOLUME 52

•

September-October 2002

•

NUMBER 5

# Journal of the Bromeliad Society

©2002 by the Bromeliad Society International

Vol. 52, No. 5

September-October, 2002

**Editor:** Chet Blackburn, 720 Millertown Road, Auburn, California 95603.

Telephone and Fax: 530-885-0201, E-mail: editor@bsi.org

**Editorial Advisory Board:** David H. Benzing, Gregory K. Brown, Jason Grant, Pamela Koide, Thomas U. Lineham, Jr., Harry E. Luther, Robert W. Read, Walter Till.

**Cover photographs.** **Front:** *Cryptanthus* 'Riesen-Erdstern', the correct name for the plant often sold as *C. 'Riesenerdstern'*. It is a cultivar of unknown parentage and is still somewhat difficult to find. Photograph by Chet Blackburn. **Back:** TOP PHOTO: *Aechmea entringeri* Leme, an attractive medium-sized plant from Brazil. BOTTOM: *Aechmea fendleri* 'Vista', a cultivar of this beautiful species from Venezuela and Trinidad. Additional text for both plants on the back cover located on page 209.

## CONTENTS

- 195 Two *Nidularium* species from São Paulo State, Brazil: Synonyms and further comments. **Elton M.C. Leme**
- 202 Cultivar Corner **Derek Butcher**
- 206 Growing Tillandsia from seed: a recent Queensland experience **Bob Reilly**
- 209 Two nice but uncommon aechmeas **Chet Blackburn**
- 210 *Aechmea matudae*: a survivor in its natural habitat **Robert & Virginia Guess**
- 216 Two new additions to the genus *Vriesea* from Bahia, Brazil **Elton M.C. Leme**
- 221 A new and attractive *Aechmea* species from the State of Bahia, Brazil.  
**Bruno Rezende Silva & Harry E. Luther**
- 226 Charcoal, the forgotten ingredient **Rex Hardy**
- 227 Repot? Divide? Do nothing?. **Penrith Goff**
- 228 The "right" potting medium and pots **Herb Plevier**
- 231 The Huntington Library, Art Collection, and Botanical Gardens  
**Brian Dawson**
- 232 Meet the new editors **Chet Blackburn**

The Journal, ISSN 0090-8738, is published bimonthly at Orlando, Florida by the Bromeliad Society International. Articles and photographs are earnestly solicited. Closing date is 60 days before month of issue. Advertising rates are listed in the advertising section. Permission is granted to reprint articles in the Journal, in whole or in part, when credit is given to the author and to the Bromeliad Society International. **Please address all correspondence about articles and advertising to the editor.**

Subscription price (in U.S. \$) is included in the 12-month membership dues: single-\$30.00, dual (two members at one address receiving one Journal)-\$35.00, fellowship-\$45.00, life-\$800.00. For first class mail add \$10.00.

**Please address all membership and subscription correspondence to Membership Secretary Carolyn Schoenau, P.O. Box 12981, Gainesville, FL 32604. Telephone 352-372-6589. E-mail: BSI@nersp.nerdc.ufl.edu**

**Back Issues:** All single copies \$4.50 1st class postpaid to ZIP addresses, other countries \$5.50 airmail postpaid; per volume \$20.00 to ZIP addresses, \$25.00 to other addresses, 3rd class or surface postpaid. Order back issues from BSI Publications, 2265 W 239th St. Torrance, CA, 90501, USA. E-mail: Publications@BSI.ORG. Make checks drawn on U.S. banks, bank drafts, or money orders payable to B.S.I. Prices are subject to change.

Printed by Fidelity Press, Orlando, Florida.

## Two *Nidularium* Species from São Paulo State, Brazil: Synonyms and Further Comments Elton M. C. Leme<sup>1</sup>

In May 2000, when the third volume of the trilogy on the nidularioid complex was in its final printing stage, two articles on *Nidularium* species from São Paulo State appeared on the scene in the January-April issue of the *Acta Botanica Brasilica*. Besides a few new combinations, Wanderley & Moreira (2000) and Moreira & Wanderley (2000) then described two new taxa to *Nidularium*. More recently, Luther (2001) reduced these taxa to synonyms, following the taxonomical treatment proposed by Leme (2000), and briefly commented on the new combinations as well. At the time the two articles became available, it was impossible to interrupt the printing process to include any new information in the *Nidularium* volume. Therefore, I am taking the opportunity to provide the commentaries on those new taxa now.

In the first article Wanderley & Moreira (2000) explicitly adopted a broad concept for *Nidularium* (including the subgenus *Canistropsis*), in opposition to the circumscription proposed by Leme (1997, 1998, 2000), and described a new taxon, *N. amazonicum* var. *paulistanum* Wand. & B. A. Moreira. The new variety was based on a specimen collected in 1992 by Wanderley *et al.* (collection number 2000) and cultivated in the Instituto de Botânica de São Paulo. By coincidence, a descendant specimen from the same cultivated clone flowered in Rio de Janeiro in December 1995 and was carefully examined for the global revision of *Nidularium* published by Leme (2000). It was cited as one of the "supplementary examined specimen" for *N. krisgreeniae* Leme. This coincidence makes it clear that *N. amazonicum* var. *paulistanum* was just a *N. krisgreeniae* conceived under variety status, which was easily confirmed also by comparing the description and drawing provided in the protologue of var. *paulistanum*.

Wanderley & Moreira (2000) unintentionally generated confusion when they stated the type material of their var. *paulistanum* came from the same cultivated source of the specimen *Kanashiro* # 386 which was selected as the type of *N. krisgreeniae*. Also, they established a *nomen nudum*, "*N. kanashiroi*", and attributed it to me. However, in order to clarify the problem, some background information must be taken into consideration.

On November 21, 1995, the botanist Shoey Kanashiro, then working at the Instituto de Botânica de São Paulo, sent three specimen of *Nidularium* to me in Rio de Janeiro for study along with a letter containing information on them. The first sample was *N. minutum* Mez, collected by him in 20 November 1995 (# 680), latter selected as a neotype (Leme, 2000; see picture on page 175). The

<sup>1</sup> Herbarium Bradeanum, Rio de Janeiro, Brazil. E-mail: leme@tj.rj.gov.br



Elton Leme

Figure 1. The type specimen of *Nidularium krisgreeniae* has light green leaves with darker green transverse veins



Figure 2. The type specimen of *Nidularium corallinum*, in shady condition, with darker leaves, which are magenta colored abaxially.

Elton Leme



Elton Leme

Figure 3. The green-leaved clonotype of *N. longiscapum*, a synonym of *N. corallinum*, which was collected by the botanist Eduardo L. M. Catharino and flowered in cultivation.

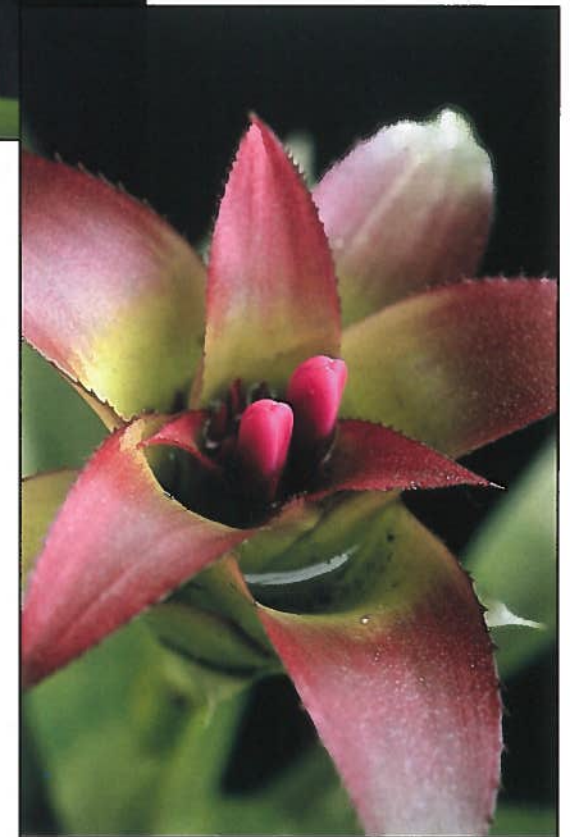


Figure 4. A close up of the clonotype's inflorescence of *N. longiscapum*, a recognized synonym of *N. corallinum*, highlighting its typical coral-red corolla.

Elton Leme

second sample became the type-specimen of *N. krisgreeniae*, collected by himself under the number 386, in 14 May 1993, at Fazenda Intervalles (Leme, 2000; see page 171 and picture on page 173). The third sample was a specimen under his number 99 that was cultivated at the Instituto de Botânica de São Paulo. According to the data provided by Kanashiro, this sample was collected by "*Wanderley s. n.*" in August 1992 at Fazenda Intervalles.

The data on the third above-mentioned specimen, "*Kanashiro # 99*", was cited in the protologue of *N. krisgreeniae* as "Sete Barras, Faz. Intervalles, Aug. 1992, *M. G. L. Wanderley s. n.* legit, fl. cult Dec. 1995, *E. Leme 3305* (HB, RB)" and listed among the "supplementary specimens examined", but was not adopted as a nomenclatural type (Leme, 2000; see page 172).

On the other hand, the specimen "*Kanashiro # 386*" examined by Wanderley & Moreira is the isotype of *N. krisgreeniae* deposited in the Herbarium of the Instituto de Botânica de São Paulo (SP), but definitively it is not the same as "*Wanderley et al. # 2000*". In fact, "*Wanderley et al. # 2000*" (deposited in SP and RB, and collected in July 1992) and "*Wanderley s. n.*" (deposited in HB and RB, and indicated by Kanashiro as being collected in August 1992, certainly a second hand information error for the correct date, July 1992) are descendant of the same source in cultivation in Instituto de Botânica de São Paulo.

Finally, the epithet "*kanashiroi*", initially chosen to honor the collector, was abandoned after a written request of Shoey Kanashiro, who would like to avoid any kind of argument with close colleagues from the Instituto de Botânica de São Paulo. Therefore, the name "*kanashiroi*" was never published before Wanderley & Moreira (2000). For instance, another more appropriate epithet was correctly chosen for the taxon (i. e., *N. krisgreeniae*) and validly published in the global revision of *Nidularium* (Leme, 2000).

After such considerations, two conclusions may be reached: 1) Wanderley & Moreira examined the isotype of *N. krisgreeniae* deposited in SP and knew in advance, even before publishing *N. amazonicum* var. *paulistanum*, that it would soon be published as a new species, as cited in Leme [1998; see page 8, and the citation "N. sp. nov. (Kanashiro 386)" and "*Nidularium* sp. nov. (Kanashiro 386)" on page 116, 117 and 127]. 2) The epithet "*Kanashiroi*", which did not have any status under the International Code of Botanical Nomenclature (art. 12.1, Saint Louis Code, Greuter *et al.*, 2000) before Wanderley & Moreira (2000), was inappropriately established and published by them, without a description or diagnosis, as a *nomen nudum*.

Although *N. amazonicum* var. *paulistanum* was published before *N. krisgreeniae*, according to art. 11.2 of Saint Louis Code (Greuter *et al.*, 2000), "in no case does a name have priority outside the rank in which it is published". So adopting the species status as the most appropriate facing the criteria used in the global *Nidularium* revision (Leme, 2000), the full citation of the synonym follows:

*Nidularium krisgreeniae* Leme, *Nidularium Bromel. Mata Atl.* 171-173, 260, fig. 44, May 2000. Type: São Paulo, Sete Barras, Faz. Intervalles, 14 May 1993, S. Kanashiro 386 legit, fl. Cult. Nov. 1995, *E. Leme 3304* (holotype: HB; isotype: SP). Synonym: *Nidularium amazonicum* var. *paulistanum* Wand. & B. A. Moreira, *Acta bot. bras.* 14 (1): 6-8, fig. 1, Jan.-Apr. 2000. Type: São Paulo, Ribeirão Grande, Res. Faz. Intervalles, Jul. 1992, *Wanderley et al. 2000* legit (holotype: SP, n. v.; isotype RB, n. v.). Paratypes: Sete Barras, Faz. Intervalles, Saibadela, Oct. 1992, *Wanderley et al. 2060* (SP, n. v.); Jan. 1994, *Morelato et al. 63* (HRCB, n. v.); Jan. 1994, *Morelato et al. 64* (HRCB, n. v.); Tapiraí, May 1994, *Mello-Silva et al. 899* (UEC, n. v.; SPF, n. v.); *Mello-Silva et al. 913* (SP, n. v.; SPF, n. v.); Aug. 1992, *Wanderley et al. 1998* (SP, n. v.); São Miguel Arcanjo, P. E. Carlos Botelho, Jan. 1995, *Morais et al. 1138* (ESA, n. v.); May 1977, *Makito 45* (UEC, n. v.); Mamparra, R. F. Carlos Botelho, Febr. 1995, *Miyagi et al. 532* (ESA, n. v.). See Luther (2001). *Nidularium kanashiroi* Leme ex Wand. & B. A. Moreira, *Acta bot. bras.* 14 (1): 8, Jan.-Apr. 2000; *nom. nud.*

In the second article, Moreira & Wanderley (2000) described a new species, *Nidularium longiscapum* B. A. Moreira & Wand., based on specimens (holotype in SP and isotype in RB) cultivated by the eminent botanist Eduardo Luiz Martins Catharino, who collected it in the county of Bananal, São Paulo State. Two other specimens, from different regions of the State of São Paulo, were designated as paratypes.

At first glance, *N. longiscapum* species appears to be cospecific to *N. corallinum* (Leme) Leme, an endemic taxon from the same region of Bananal, São Paulo State. However, some conflicting data in the protologue (i. e., Latin diagnosis, description, discussion and figure) was detected, which suggested the need of reevaluation of the type material of *N. longiscapum*. For example, in the Latin diagnosis the petals are described as purple ("petalis in lobis cuculatis, purpuratis"), but in the description it is stated the flowers are pink ("flores rosas") with pink petals ("pétalas rosas"). Once again, in the discussion item, they pointed out the purple color of the petals. Also, the petals appendages were described as having a fimbriate apex, while in the figure 1d their apex is irregularly dentate.

Unfortunately, after consulting the involved herbaria (i. e., SP, SPSF and RB), I was informed that the holotype, isotype and paratypes of *N. longiscapum* were still on loan to Moreira & Wanderley, and not available for loan or even for examination (J. R. Grant, J. A. Pastore and B. R. Silva, pers. comm.). However, the collector of *N. longiscapum*, Eduardo L. M. Catharino, still had the original clone in cultivation and in June 2001 kindly provided a mature living specimen in full bloom.

After examining this living "clonotype" of *N. longiscapum* it was confirmed that its coral red colored petals, the leaf and bract conformation, and the floral morphology are identical to the characteristics presented by *N. corallinum*, which

suggestively came from the same type locality (*i. e.*, Bananal, São Paulo). The single peculiar difference is related to the green leafed color of the living clone of *N. longiscapum* and the wine-purplish abaxial color of the leaves of *N. corallinum*. This kind of variation is very common in *Nidularium* [e. g., *N. amazonicum* (Baker) Linden & E. Morren ex Lindm., *N. antoineanum* Wawra, *N. apiculatum* L. B. Sm., *N. innocentii* Lem., *N. krisgreeniae* Leme, *N. procerum* Lindm.] and in other bromelioid genera as well (e. g., *Aechmea*, *Canistropsis* and *Lymania*) and is seen as an adaptation to shady habitats (Leme, 2000). Thus, the phenomenon is not consistent enough to taxonomically segregate *N. longiscapum* from *N. corallinum*. The full synonym citation follows:

***Nidularium corallinum*** (Leme) Leme, *Nidularium Bromel. Mata Atl.* 121, 258, fig. 28, May 2000. Type: São Paulo, Bananal, Sertão das Cobras, Faz. Albion, 23 Sept. 1989, E. Leme 1427, fl. cult. Aug. 1990 (holotype HB).

BASIONYM: *Wittrockia corallina* Leme, *J. Bromeliad Soc.* 42 (2): 51, fig. 1, 2, 1992. SYNONYM: *Nidularium longiscapum* B. A. Moreira & Wand., *Acta bot. bras.* 14 (1): 122-123, fig. 1, Jan.-Abr. 2000. Type: São Paulo, Bananal, Sede da Probocaina, 10 Jun. 1995, E. Catharino s. n. legit, fl. cult. *São Paulo Botanic garden* 540 (holotype SP, n. v.; isotype RB, n. v.; clonotype: HB). Paratypes: São Paulo, Biritiba Mirim, Est. Ecol. Boracéia, 10 Jun. 1984, *Custodio Filho* 2399 (SPSF, n. v.); Lavrinhas, 12 km north Lavrinhas, Vale do Ribeirão do Braço, 6 Apr. 1995, *Kinoshita & Moreira* 9520 (SP; n. v.). See Luther (2001).

Finally, comparing the morphological characteristics of the flowering clonotype of *N. longiscapum* and the description and drawing in its protologue, I found the discrepancies listed below:

- 1) flowers are ca. 40 mm long, but not 29 mm long. The shorter length may suggest that an immature flower was measured.
- 2) Sepals are ca. 20 mm long and connate at base for ca. 3 mm, and not 18 mm long neither connate for 1 mm, which may suggest a mistake when cutting and measuring the sepals.
- 3) Petals are ca. 30 mm long, but not 20 mm long, suggesting again that an immature flower was measured. Their color is coral red (as depicted in its description), and not purple as indicated in the diagnosis and discussion item. The basal appendages are long fimbriate, as described, but not irregularly dentate as portrayed in figure 1d, as well as the petals apex is obtuse-cucullate, but not truncate like the same drawing.
- 4) The ovary is 10 mm long, and not 4 mm long. Curiously, the immature fruits were described as having 10 mm long.

Despite the already mentioned impossibility of examining the type material of *N. longiscapum* (*i. e.*, not available for loan or inaccessible to non authorized persons), which was compensated for by the available flowering living clonotype, and taking into consideration the discrepancies highlighted above and the fact

that Moreira & Wanderley (2000) artificially related their species to *Canistropsis billbergioides* (Schult. F.) Leme, it is reasonable to speculate that the paratypes designated in the protologue, or at least one of them, may belong to a distinct species of another genus. In the speculation field, considering the origin of the paratype from Biritiba Mirim, Est. Ecol. Boracéia (SPSF), it is possible to state it may represent *Canistropsis exigua* (E. Pereira & Leme) Leme. That region is the type locality of *C. exigua* and its shorter petals appendages and the ovary 5-7 mm long only may justify some of the reported morphological discrepancies attributed to *N. longiscapum*. The paratype from Lavrinhas (SP) may represent some species of the "blue complex" of *Nidularium*, probably *N. antoineanum* or *N. meeanum* Leme, Wand. & Mollo, and justify the confusion concerning the erroneously reported purple color of the petals.

Finally, the new specimen of *N. corallinum* recently introduced in cultivation under the synonym *N. longiscapum* represents a valuable addition to ex-situ conservation of this endemic and rarely seen species. Horticulture should also welcome this lighter leafed colored clone of *N. corallinum*, which provides a more intensely ornamental contrast to the apical red color of its primary bracts.

#### ACKNOWLEDGMENT

I thank the botanist Eduardo L. M. Catharino who kindly provided the living material of the clonotype of *N. longiscapum*, as well as Jason R. Grant, for his valuable commentaries and suggestions.

#### LITERATURE CITED:

- Greuter, W., J. McNeill, F.R. Barrie, H.M. Burdet, V. Demoulin, T.S. Filgueiras, D.H. Nicolson, P.C. Silva, J.E. Skog, P. Trehane and N.J. Turland. 2001. *International Code of Botanical Nomenclature. (St. Louis Code)*. Electronic version <http://www.bgbm.fu.berlin.de/iapt/nomenclature/code/SaintLouis/0000St.Luistitle.htm>
- Leme, E. M. C. 1997. *Canistrum: Bromeliads of the Atlantic Forest*. Salamandra, Rio de Janeiro. 107 p.
- \_\_\_\_\_. 1998. *Canistropsis: Bromeliads of the Atlantic Forest*. Salamandra, Rio de Janeiro. 143 p.
- \_\_\_\_\_. 2000. *Nidularium: Bromeliads of the Atlantic Forest*. Sextante Artes, Rio de Janeiro. 263 p.
- Luther, H. E. 2001. De Rebus Bromeliacearum. *Selbyana* 22 (1): 34-67.
- Moreira, M. A. & M. G. L. Wanderley. 2000. Nova Espécie de *Nidularium* Lem. (Bromeliaceae) para São Paulo, Brasil. *Acta bot. bras.* 14 (1): 121-123.
- Wanderley, M. G. L. & B. A. Moreira. 2000. Notas Taxonômicas sobre *Nidularium* Lem. e *Wittrockia* Lindm. (Bromelioideae, Bromeliaceae). *Acta bot. bras.* 14 (1) 1-9.

## Cultivar Corner

Derek Butcher<sup>1</sup>

### Update on the state of the Bromeliad Cultivar Registry

When Don Beadle produced the first Bromeliad Cultivar Registry in 1998 there were about 5,000 cultivars listed. Most listings came from information gathered during the previous 48 years since the inception of the Bromeliad Society. We now have over 6,000 names of which 2,000 are identified by photographs that can be accessed under the Cultivar Corner on the BSI Website. In the good old days you may have had a name but you did not know what the plant was supposed to look like.

These days I will only accept an entry to the Registry if it is accompanied by a color photograph which is treated as a Standard according to the ICNCP (International Code of Nomenclature of Cultivated Plants) rules. This photograph plays the same role as a herbarium specimen does under the ICBN rules. In the past, these photographs were hidden away in the archives of the Cultivar Registrar but are now available for all to see through the Internet. This availability of standards is also evident in the number of herbariums that are now scanning their herbarium specimens and making them available on Web sites.

A check of the Bromeliad Register will reveal that only 50% of names came from the direct action by hybridists in the form of formal registration. The other 50% came from action taken by others, including past Registrars, who saw names on nurserymen's lists or show benches, or just used in general circulation, which they felt should be captured for posterity.

The last two years has seen an upsurge in the number of formal registrations to the Registrar and this is very encouraging. This shows that hybridists want to play an active role in the correct identification of their home produced cultivars. The role of the Registrar may be to continue to check up on the odd name that has fallen by the wayside but not to pick up anything like 50%!

One area of concern remains and that is the lack of interest in the ICNCP rules by botanists and collectors of plants in the wild. If the plant is new to science there is a keenness to follow the ICBN rules where plants are given Latin names. If a plant is just a form then anglicized names are freely given. This is especially so if it has commercial value, but no one, so far, has bothered to advise the Registrar. All I need is a photograph and a few details. This is much simpler than the ICBN procedure.

I am optimistic that just as the hybridists have lifted their game, anyone who finds a good plant in the wild that has commercial potential and gives it a non-Latinized name will advise me of their actions.

<sup>1</sup> BSI Cultivar Registrar, 25 Crace Rd., Fulham, SA 5024, Australia. [tillands@senet.com.au](mailto:tillands@senet.com.au)

## Plant naming

If a new plant is found in the wild all botanists know they can describe it and name it according to the rules of the International Code of Botanical Nomenclature. If a plant arises in cultivation that is considered unique, all botanists attached to botanical gardens and many keen gardeners know it can be named according to the current edition of the International Code of Nomenclature of Cultivated Plants. Information on registering a plant name can be found in the code, but perhaps the best way is to check the website <http://www.ishs.org/icra>. This way you can find out the ICRA (International Cultivar Registration Authority) for the family of group of plants you are interested in. You can then proceed accordingly to register the name internationally and it will duly appear in the register of an ICRA, available to all for inspection.

If you are interested in securing some financial protection for your new cultivar you can seek a plant patent or Plant Breeders Rights (PBR) through the relevant authority. I remember some 20 years ago attending a series of meetings regarding the setting up of PBR in Australia. I even dared to stand up and suggest that this system was great for the large organization but not for the individual. My reasoning at the time was that to sue a person breaking the PBR would only be worthwhile if damages exceeded the legal fees. So, in this case, size does matter.

There is one interesting fact regarding names for cultivars with patents or PBR that must be unique in the same way that the ICNCP rules demand. It is quite common to find that those responsible for checking names for these protected cultivars fail to check with an ICRA to see if a name is already in use. Therefore there are two naming bodies effectively operating independently of each other. I wonder what the legal situation would be if a plant name had already been registered and published under the ICNCP rules and a patent or PBR had been issued for the same name where the person responsible for granting the protection did not check the records of the ICRA.

Is such legal protection worthwhile? We know that there is a trend for chain stores to sell plants without cultivar names, which could also be an attempt to break the patent or PBR, an intriguing situation that anyone seeking a patent or PBR should be aware of. Do they realize how expensive patents/PBR are, remembering that the owner of these rights has to do their own police work to ascertain if someone is breaking such patent?

If a hybrid is made and the hybridizer does not register this cultivar with an ICRA then anybody could claim it as their own, steal it, or even take out a PBR on it unless the hybridist is vigilant. If the hybridizer does register the cultivar they would have the extra protection of others being aware of the cultivar, and what it looks like, and would have more protection in that the name has been previously published. The legal adviser involved with any such PBR would be in a very embarrassing situation! There may be a problem where there is a name

change involved but this could also occur under another conflicting PBR. The problem is that the general public knows nothing about the identity or the inner workings of the PBR. The listing on an ICRA is much more public and less subject to abuse.

In regards to bromeliads, the only ones who take out plant patents or PBR are located in Europe and the USA, purely because of the size of the markets in smaller countries would not make it worthwhile. Any reciprocal arrangements between countries would only occur by international treaty.

The great majority of bromeliad cultivars are named under the ICNCP rules and there are some very good ones that compare very favorably with those that have patents.

Bromeliads can be big business and anything new commands a very high price if only for 2 - 3 years. I maintain it is in your interest to register your hybrid with the BCR now. If you have a few thousand dollars to spare to start and a few more thousand to prove your case in court against an alleged miscreant, then try the patent process or PBR.

I may be biased but I believe the BCR is a great way to learn about what plants are available and what they are supposed to look like. We should all act as responsible growers and if any anomaly is noted like different names being reported for the same plant, please let the Registrar know.

But wouldn't it be great if the photographs lodged with the patent/PBR also appeared in the BCR! Is this a pipe dream?

### Correct names - Why Bother?

In the July/Aug 2002 issue of *The Bromeliadvisory*, the newsletter of Bromeliad Society of South Florida, I read about the problems of misnamed plants and agreed with the writer wholeheartedly. However, I chanced to enquire on the name *Hohenbergia* 'Fudge Ripple' in the Register under the Cultivar Corner at <http://BSI.org> and gasp, shock and horror, there it was!! This is clearly a breach of the ICNCP (International Code of Nomenclature of Cultivated Plants) rules and will be deleted forthwith!

Giving a name to a hybrid is relatively straightforward once you have concluded that both parents have been involved in the production of this hybrid. In other words it is clearly different. It is a bit more difficult with plants already described formally under the ICBN (International Code of Botanical Nomenclature) and which have been given Latin names. If a plant is found in the wild is sufficiently different from the named species, it may be given a Latin name as a subspecies, variety, or form. The most common example is where longitudinal stripes (loosely called variegation) appear, and since this cannot be readily reproduced by seed the name 'variegata' rarely occurs under the ICBN rules.

Instead it may be given a cultivar name (not Latinized) but this name must be recognized in its own right. Therefore *Aechmea* 'Mend' or *Aechmea lueddemanniana* 'Mend' is acceptable for listing in the Register but *Aechmea lueddemanniana* 'Red Leaf' is not acceptable because 'Red Leaf' can be interpreted as being any other aechmea with a 'Red Leaf'!

Perhaps it may be worth mentioning here the practice of hobbyists to use words such as "var. *rubra*" when they play at being a botanist. I do not mind them using Latin provided they follow the ICBN rules and describe it in Latin plus all the other rigmarole involved. A non-Latin name like 'Red Leaf' is better even though it will not appear in the Registry!

Clearly there is no difference between *Hohenbergia correia-araujoi* and 'Fudge Ripple' and therefore 'Fudge Ripple' will officially disappear.

### In search of the elusive black *Neoregelia*

I have always associated voodoo with black magic and was somewhat confused with the two *Neoregelia* 'Voodoo' listings in the Bromeliad Cultivar Registry - one by Elmore and the other by Wurthmann. I felt sure we were growing the Elmore 'Voodoo' in Australia but it turns out that we were actually growing the Wurthmann one, hence my keenness to get photographic records into the BCR data base (see <http://BSI.org> - Cultivar Corner - Cultivar data base.)

I knew that Michael Kiehl of Michael's Bromeliads in Florida had a large number of Elmore's hybrids and yes, he knew the difference between the two 'Voodoo's. I just had to get a photograph at flowering stage because the descriptions in the BCR confused me. Neither description suggested 'Black Magic' so when Herb Plevier made one of his southerly expeditions to escape the cold of a New York February, and took photographs of both plants. I was greatly pleased. Plant gossip in Florida suggested that Wurthmann's plant had been renamed 'Midnight' without advising the then Registrar. So it appears this plant is going around under two names! On this occasion I have listened to gossip and am showing a reference in the BCR that plants that were known as 'Voodoo' but have very dark leaves are now called 'Midnight' Wurthmann.

This brings me to a different problem in which two cultivars share the same name but 'Midnight' Goode is different to 'Midnight' Wurthmann as the photos on the BCR database show.

This doubling up of names should not occur NOW because hybridists have access to an up-to-date Register. Once a name has been allocated and the plant distributed it is very difficult to change the name to a unique one at a later date.

*Neoregelia* 'Voodoo' Elmore remains and is a plant that looks superficially like a spotted *Neoregelia carolinae*. While looking for other 'black' neoregelias there are 'Mandela' and 'Nelson' by Grace Goode but the best, so far, seems to be 'Darkest Hour' from Sharon Petersen in Hawaii.

*Fulham, South Australia, Australia*

## Growing Tillandsias from Seed: A Recent Queensland Experience

Bob Reilly

In the 1980's and early 1990's Mark Dimmitt wrote a series of articles in the *BSI Journal* on growing atmospheric, or gray-leafed, tillandsias from seed. This article outlines recent Queensland (Australia) experience with a method that differs from that described by Mark Dimmitt.

The obvious question is why bother growing tillandsias from seed, as it takes from four to ten years to produce a flowering plant? There are three reasons:

- First, it is a lot of fun growing plants from seed;
- Second, it helps to preserve populations of these plants growing in the wild; and
- Third, many tillandsias only produce one or two offsets. This makes it very difficult, at least in Australia, to obtain a "clump" of many species, which is often the most attractive way to display them. Also, if you only obtain one offset every time a plant flowers, sooner or later an accident will happen, resulting in the loss of the offset and thus the plant from your collection

The tillandsias referred to in this article are the xerophytic and atmospheric species that mainly grow in semi-arid habitats. Thus "tank-type" tillandsias such as *Tillandsia wagneriana* and *T. lucida* are excluded, although many of the procedures outlined below can also be applied to them.

The first step is to obtain seed. There are various sources, namely, your own plants or those of friends, or the seed funds operated by the Australian and New Zealand Bromeliad societies or the Bromeliad Society International. However, you need to be a member of these societies to access their seed banks.

Sow seed as soon as possible. It usually remains viable for only about two months. Storage life can often be extended for a few more weeks by storing it in a paper envelope in the door of your refrigerator. Make sure it does not get wet, and do not place the envelope in a plastic container.

Many different types of medium have been used successfully to germinate tillandsia seed. However, it is important to consider what will happen when you try to transplant seedlings onto the next stage. Atmospheric tillandsia seedlings are easily damaged during transplanting compared to the "tank-type" bromeliad seedlings.

For example, if you've sown seed onto a *Callistemon* or *Leptospermum* branch, they will germinate well, but can be quite difficult to transplant successfully as they will have sent roots deep down into the bark.

A method that has been successfully used by tillandsia growers in southern Queensland is outlined below:

- Obtain a piece of flat, polystyrene foam, about 10 to 25mm in thickness. Fruit and vegetable boxes are a good source for such material.
- Place a 5 to 10mm layer of coconut fibre (coir) on one or both sides of the foam block. The material can be obtained from hanging basket liners made out of coconut fibre, small bags of such fibre which are also sold for lining baskets, or coir - filled mattresses (although these are difficult to obtain).
- Bind the coconut fibre into position by wrapping fishing line around it at 20 - 30mm intervals.
- Drill a hole through one end of the block and attach a hook to it. At the other end attach a fishing sinker or heavy nut. (This stops the polystyrene block from being blown about in the breeze and possible dislodging the young tillandsia seedlings).
- Place the tillandsia seed onto the surface of the coconut fibre. The bundle of seed needs to be "teased out" so that individual seeds are, on average, 3 to 5mm apart, if possible. (In practice, some seeds will stay in small clumps, but don't worry about this situation).
- Depending on how much seed you have, place the seed of several species onto one "block". The seed of each species is sown in a horizontal band across the block, with a space of at least 20mm between each band. The seed of the smallest growing species is placed at the top of the block, with the largest species being placed at the bottom. (This approach will result in the largest growing species' seedlings receiving the most water, which they need, and not shading the smaller seedlings).
- The seed will usually adhere to the coconut fibre once water is sprayed onto it. You can further reduce the chances of the seed blowing away by wrapping some more fishing line around the seed - covered polystyrene block.

The seed is watered twice a day in summer (morning and afternoon) and once a day in winter (morning). When dry winds occur, a clear plastic bag can be placed over the block to help retain moisture. Align the bottoms of the bag and block and leave the bag open.

The blocks should be suspended from a roof or branch. Ideally, they should receive filtered light, such as that provided by 70% - 80% shade cloth, for the entire day. A good flow of air around each block is essential. They must be protected from freezing conditions.

If seed has been sown on both sides of the block, and one side receives more sunlight than the other during the day, rotate the block every two to four weeks. This will "balance up" the amount of sunlight received by the seedlings on each side of the block. An alternative used by some growers is to place a fishing line swivel immediately above the block's top, so it swings around in the breeze.

The seedlings should receive liquid fertilizer at the same time, and at the same strength, as mature plants. (Apply the fertilizer throughout the year - at least, in southern coastal Queensland).

The only problem now likely to occur for several years is the possible growth of algae on the coconut fibre. This will only occur if the fibre is kept too wet. It can best be treated by allowing the coconut fibre to dry out more often. This will kill the algae, but should have no long-term adverse impacts on the seedlings.

Let us go two to five years into the future. By this time, the seedlings should be about 10 to 15mm high. They are now ready for transplanting.

The following approach can be used:

- Remove the fishing line if it has not already rotted away.
- Place a sharp, flat bladed knife between the coconut fibre and the surface of the polystyrene block. Slide the knife forwards so the coconut fibre mat, and seedlings, are separated from the block. (Some of the seedlings may have rooted into the block, so some force may need to be applied to the knife).
- Pull the coconut fibre mat apart. It should separate quite easily, with little damage to the seedlings.
- Attach each seedling to a mount, using the following process:
  - Obtain *Callistemon* or *Leptospermum* branches which are 25 to 40mm wide and 30 to 60cm long, or strips of cork of a similar width and length.
  - Leaving a gap of about 25mm between the outermost leaves of each seedling, tie the seedlings onto the branch, using thin strips of nylon pantyhose.

Depending upon the ultimate (flowering) size of the plants, this process may be repeated several times before the plants flower. A variant of this approach is to remove every second seedling, mount them separately, and allow the remainder to reach flowering size on the original strip of cork or wood. Each transplanting becomes easier to undertake, as the plants are larger and, consequently, easier to handle.

At the second or subsequent transplanting, consideration can be given to putting the seedlings into individual pots, with a potting mixture used for orchids, rather than onto a length of wood or cork. Suitable species for this treatment include: *T. fasciculata*, *T. capitata* and *T. seleriana*.

Once the plants flower, repeat the whole process again!

#### ACKNOWLEDGMENT

I gratefully acknowledge the advice I have received from Barry Genn of Brisbane, Queensland in preparing this article. Most of it is based on his experience.

## Two Nice but Uncommon Aechmeas. Chet Blackburn

Pictured on the back cover, both for the first time in the *Journal*, are a couple of aechmeas that are relatively new to cultivation.

Rarely found in collections, *Aechmea entringeri* Leme is a rather striking plant from Brazil with an attractive long-lasting inflorescence. It forms an upright rosette with reflexed leaf tips and brown leaf sheaths. The foliage is faintly mottled with the mottling being more pronounced in the younger leaves and in offsets. The mottled pattern of dark green and light green found in the younger leaves resembles somewhat the mottling seen in *Nidularium fulgens* and *Edmundoa lindenii*.

It is a medium-sized plant, reaching almost 3 feet in inflorescence, but is nonetheless a well-mannered one. The upright nature of the foliage doesn't require as much space as most plants of that size. Furthermore, it is not one of the "mad slasher" aechmeas. The leaves are sturdy but the spines on the margins are small and incapable of breaking skin.

The inflorescence shows off well, especially in strong light. It consists of many delicate-looking short branches forming a loose elongated cluster. (See the photo on the back cover). The bracts are light pink and translucent but fade to white with age. The light blue flowers contrast nicely with the pinkish bracts and continue to do so even after anthesis by turning black and persisting for a long time.

The second photo on the back cover is a relatively new variegated form of an old favorite, *Aechmea fendleri* André ex Mez. It goes by the name *Aechmea fendleri* 'Vista'. The variegation is pinkish-white in strong light. Even without variegation, *Aechmea fendleri* is a desirable plant in horticulture, being easily grown, blooming readily, and being one of the most prolific producers of offsets among the aechmeas. It is almost as tall as *A. entringeri*, but with its arching leaves requires more room. It is not one of the "mad slashers" either, but you will become aware of its presence should you brush by it with bare arms. *A. fendleri* is from Venezuela and Trinidad, and like most other plants from that area, is frost sensitive.

Auburn, California

## *Aechmea matudae*: A Survivor in its Natural Habitat

Robert Guess and Virginia Guess

Although the inventory of Bromeliaceae in Chiapas, Mexico, is small in comparison to other Neotropical regions, the occasional discovery of a species hidden away in an isolated pocket fuels our interest in this state. Not always new, more often just forgotten or known only from the original holotype, to bring such a species forward once again is reward enough. When needing to return to take a second and even third look at the plant to reaffirm the identification, the plant takes on even greater significance, especially when the environment in which it exists is not always the most comfortable to visit. This is the situation we confronted with *Aechmea matudae* L.B. Smith, an elusive endemic species that we believe grows only in a small circumscribed area of the Soconusco, the Pacific Coastal Plain of Chiapas.

The first photograph of the species to appear in the *Journal of the Bromeliad Society* served as one example of Eizi Matuda's contributions to the Bromeliaceae of Chiapas (Guess and Guess 2001). When our identification of this species in the article raised some question, we revisited the original collection site in order to procure a flowering specimen for further verification. We subsequently sent plant material to the Mulford B. Foster Bromeliad Identification Center at Marie Selby Botanical Gardens where the plant was confirmed as *A. matudae*, a species that closely resembles *Aechmea castelnavii* Baker.

*Aechmea matudae* is noteworthy for its long, armored leaves and vivid pink scape bracts. Because of the size and length of leaves, some over one meter long, this epiphytic *Aechmea* requires tall, sturdy trees for support, primarily those with relatively small leaves to filter intense sunlight. The green berries and lavender petals that develop from November through January are similar to those of *A. castelnavii*, a species not known to grow north of Costa Rica. At the end of the dry season in May, the berries turn deep reddish-purple, almost black, as they do in *A. castelnavii*. The spines (mucros) on the sepals of *A. matudae*, often over seven millimeters long, however, are a distinguishing characteristic.

The species appears to be environmentally sensitive and difficult to grow when removed from its natural habitat. This small niche located in the



Robert Guess

Figure 5. *Aechmea matudae*, an epiphytic species, is known only from the hot, humid coastal plain of the Soconusco, Chiapas.



Robert Guess

Figure 6. The inflorescence of *Aechmea matudae* develops in November at the beginning of the dry season.



Figure 7. By late January, the delicate lavender petals of *Aechmea matudae* contract, twist, and darken leaving the bright green berries as the most prominent feature.

Robert Guess

municipality of Acacoyagua lies in the center of the Soconusco, a narrow plain formed by the steep mountains of the Sierra Madre de Chiapas on one side, and dense mangrove swamps on the ocean side. The Soconusco stretches over two hundred kilometers from the small town of Pijijiapan to the border between Mexico and Guatemala. A vast network of small tributaries channels water from the high mountains into larger rivers that flow into the Pacific Ocean. In the rainy season, these rivers often burst over their banks to flood adjacent low-lying areas.

With the abundant water supply that sustains a persistent evergreen vegetation, the region historically has provided an advantageous edge for farming. At the end of the nineteenth century, this fertile lowland attracted many immigrants, including a small colony from Japan who settled in the pueblo of Acacoyagua. Eizi Matuda (1894-1978), who migrated in 1922 to join this Japanese agricultural colony, first described *A. matudae* after finding it in the environs of his finca, a few kilometers from Acacoyagua. When he relocated to Mexico City in the 1940s, his former land was gradually subdivided into small parcels, and much of it cleared for cattle grazing.

Today four large neighboring fincas, all established in the early 1900s and still occupied by descendants of the original families who first settled them, surround the property once owned by Professor Matuda. Access to these private fincas is difficult and requires a network of communication with local people. By making several fortuitous contacts, we were able to explore one where many original groves of large trees remain, locally called *Guanacaste* and *Guachipilfn*. Here, in January 2001, we discovered an isolated population of well over five hundred plants of *A. matudae* thriving on these trees.

In addition to *A. matudae*, the relatively sparse inventory of Bromeliaceae on this finca includes *Catopsis nutans* (Swartz) Grisebach, both pistillate and staminate plants, *Tillandsia utriculata* Linnaeus, *Tillandsia dasyliriifolia* Baker, *Tillandsia caput-medusae* E. Morren, *Tillandsia schiedeana* Steudel, *Tillandsia concolor* L.B. Smith, and *Bromelia karatas* Linnaeus. By far, *A. matudae* is the most abundant species. This property, bordered by two tributaries that converge to flow into a major river just beyond the boundaries, was once the site of a Pre-Hispanic settlement, and then later a Spanish colonial town that was occupied from 1572 to 1767 (Gasco 1989).

With its year-round water supply, the site offered an ideal location along a Pre-Columbian trade route from Guatemala to the Central Valley of Mexico. Caravans of goods, including large amounts of cacao, could cross the two smaller streams year round, when the larger river beyond was impassable. Today it provides *A. matudae* an advantageous habitat at an elevation of 160 meters with high temperatures and humidity from the year-round moisture of the riverine environs. The owner of this cattle-dairy ranch of approximately one hundred and fifty hectares, maintained within the same family for three generations, has conscientiously attempted to preserve some of the natural vegetation, and indirectly provided a favorable habitat for *A. matudae*.

When we returned here in late June 2002, in order to verify the color of the berries and collect a sample of seeds, we were able to visit the adjacent cattle fincas where we found less favorable conditions and very few specimens of *A. matudae*. Most of the larger trees that the plants depend on had been removed in order to increase grazing land or replaced with large, densely leafed mango trees. Although Eizi Matuda lived in an area rich in Pre-Columbian and colonial history, it was the unusual botanical features of Chiapas that attracted him throughout his lifetime. Early in his plant collecting forays, he recognized that Chiapas formed a transitional zone between Mexican and Central American flora. Years later, Dennis Breedlove (1981) described the various physiographic regions of this state including the distinctive flora of each, and identified the characteristics that distinguish it as a unique floristic zone. One of these features is the significant number of plant genera that reach their southernmost and northernmost limits here, including some endemic species of Bromeliaceae. Matuda identified several of these endemics, one of which was *A. matudae*, known up to now only from specimens in herbaria. Today the survival of this species appears to depend on the largess of a single finca owner who recognizes the importance of preserving a segment of the natural surroundings. Within its borders, the state of Chiapas may hold many more unexplored areas with yet to be discovered or verified species of Bromeliaceae. Because of the difficulty in gaining entry to some of these areas as well as the relatively small numbers of plants, it has drawn little attention in recent years. Although extensive work in Chiapas has been done on the genus *Tillandsia*, other genera have been almost ignored. It is possible that without further investigation, relatively unknown species, such as *A. matudae*, could be lost or placed in synonymy with more widely distributed and better-known species. Some haste in such endeavors is necessary as the destruction and modification of the natural environment continue here at an alarming pace.

#### ACKNOWLEDGEMENTS

Our thanks to Dona Francesca Takemura, Dona Guillermina Matsui, Senor Marco Aurelio Matsui, and Senor Facundo Yamamoto for their generosity in providing access and information about the fincas that have been in their families for several generations; and to Janine Gasco and Barbara Voorhies for introductions to their longtime friends in Acacoyagua and in Escuintla. We would not have been able to confirm the identity of this species without the help of Harry Luther, Director of the Mulford B. Foster Bromeliad Identification Center at Marie Selby Botanical Gardens.

#### REFERENCES CITED

- Breedlove, D. E. 1981. Flora of Chiapas. Part 1. Introduction to the Flora of Chiapas. San Francisco, California Academy of Sciences, p. 3.
- Gasco, J. 1989. "Economic History of Ocelocalco, a Colonial Soconusco Town." In *Economies of the Soconusco Region of Mesoamerica: Ancient Trade and Tribute*, edited by B. Voorhies. Salt Lake City, University of Utah Press, pp. 304-325.
- Guess, R. and V. Guess. 2001. "Eizi Matuda's Contribution to the Bromeliaceae of Chiapas, Mexico." *J. Bromeliad Soc.* 51 (4): 161-168.

*Santa Barbara, California*



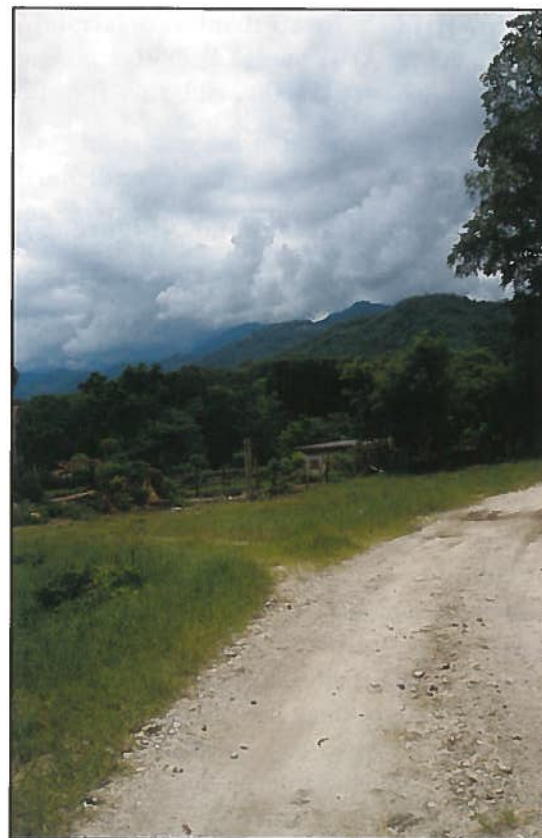
Figure 8. The length of the spines on the sepals is a distinctive characteristic of *Aechmea matudae*.

Robert Guess



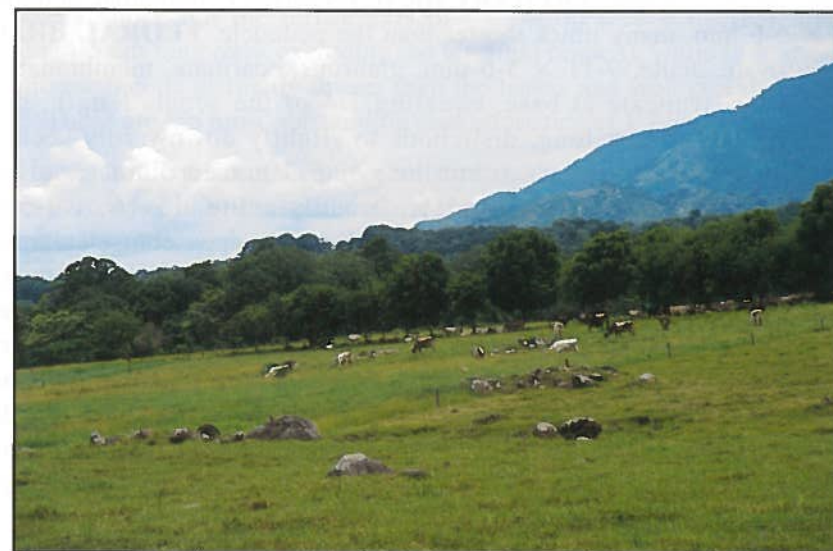
Robert Guess

Figure 9. At the end of June, the green berries of *Aechmea matudae* turn deep purple, almost black.



Robert Guess

Figure 10. Groves of large trees on a cattle finca near Acacoyagua, Chiapas, provide a natural environment for a large population of *Aechmea matudae*.



Robert Guess

Figure 11. The habitat of *Aechmea matudae* is slowly diminishing as trees on neighboring fincas are cut for pasture land.

## Two New additions to the genus *Vriesea* from Bahia, Brazil

Elton M. C. Leme<sup>1</sup>

### *Vriesea breviscapa* (E. Pereira & I. A. Penna) Leme, stat. nov. (Figure 13).

Basionym: *Vriesea sparsiflora* L. B. Sm. var. *breviscapa* E. Pereira & I. A. Penna, *Bol. Mus. Bot. Mun. Curitiba* 62. 4. 1985.

**PLANT** epiphytic, lacking rhizomes, flowering ca. 30 cm tall with the inflorescence extended. **LEAVES** 12 to 17, suberect-arcuate, forming a narrow funnellform rosette; **SHEATHS** elliptic, greenish, densely and inconspicuously lepidote; **BLADES** sublinear, not narrowed at base, apex acuminate to caudate, 10-11 × 1.5-1.6 cm, green, very inconspicuously and sparsely white-lepidote mainly abaxially. **SCAPE** inconspicuous, shorter than the leaf sheaths and not visible above the rosette. **SCAPE BRACTS** narrowly lanceolate, acuminate-caudate, exceeding the internodes. **INFLORESCENCE** very laxly paniculate, bipinnate, ca. 24 cm long, with loosely spreading-recurved to subpendulous, very slender branches, the lateral branches ca. 4, 12-16 cm long, with ca. 2 flowers laxly disposed at its apex, basal peduncle ca. 10 cm long, 0.1-0.2 cm in diameter, straight, green, glabrous, bearing ca. 3 sterile bracts, very narrowly lanceolate, acuminate, stramineous, distinctly shorter than the internodes, the terminal branch resembling the lateral ones, but ca. 20 cm, ca. 3-flowered, basal peduncle ca. 16 cm long, bearing ca. 6 sterile bracts. **RACHIS** ca. 0.1 cm in diameter, flexuous, green, glabrous. **PRIMARY BRACTS** narrowly triangular, acuminate, 14-15 × 5-6 mm, many times shorter than the peduncle. **FLORAL BRACTS** narrowly ovate, acute, 9-11 × 5-6 mm, glabrous, ecarinate, membranaceous, finely nerved, truncate at base, equaling 1/4 of the sepals length, green. **FLOWERS** ca. 40 mm long, distichous to slightly downwardly secund at anthesis, pedicel obconic, ca. 6 mm long, 2.5-3 mm in diameter at apex. **SEPALS** narrowly elliptic-lanceolate, broadly acute, 15-16 × 4-5 mm, yellowish-green, ecarinate, glabrous. **PETALS** linear, apex obtuse-emarginate, 30-35 × 3-4 mm, yellow, forming a tubular corolla, slightly suberect at apex at anthesis, bearing at base 2 appendages, 10-11 × 1 mm, sublinear and adnate to the petals for ca. 9 mm, and with narrowly triangular-acuminate, ca. 1.5 mm free blades. **STAMENS** distinctly shorter than the petals and included at anthesis. **FILAMENTS** free, ca. 16 mm long. **ANTHERS** suboblong, ca. 2 mm long, dorsifixed near the base, base obtuse, apex very inconspicuously apiculate. **STIGMA** convolute-bladed, yellow, ca. 0.5 mm in diameter, surpassing the anthers but much shorter than the petals. **OVULES** very shortly caudate.

**Type:** Brazil, ESPÍRITO SANTO: Conceição do Castelo, 26 Feb. 1983, L. K. Correia de Araujo 52, R. Menescal & R. Bello. (Holotype: HB).

<sup>1</sup> Herbarium Bradeanum, Rio de Janeiro, Brazil. E-mail: leme@tj.rj.gov.br

**Material examined:** Brazil, STATE OF BAHIA, Una, road São José to Una, km 9, 7 Apr. 1995, E. Leme 3031, P. Nahoum, A. Amorim, L. A. Mattos & J. C. da Silva, fl. cult. July 2000 (HB).

In its original publication, *V. sparsiflora* var. *breviscapa* was distinguished from the typical *V. sparsiflora* by a single characteristic then considered important: the distinctly shorter floral scape that equals the leaf sheaths ("Scapus brevissimus vaginis solus altitudinem aequans et bracteis obtectus a var. *sparsiflora* differt" [sic!]; Pereira & Penna, 1985). Due to the lack of a detailed description or a line drawing and a photograph in the protologue, the taxonomical position of this taxon at the infraspecific rank was based on the worldwide recognized authority of their authors only.

Recently, a *Vriesea* specimen collected in Bahia State flowered in cultivation (Leme 3031 et al.) and provided new morphological information that recommended the revision of the original rank proposed by Pereira & Penna (1985) for var. *breviscapa*. Almost at the same time, we found in the private files of Pereira, two photographs of the type-specimen of this variety in full bloom, as well as a detailed unpublished study carried out by Pereira himself comparing the morphology of the typical *V. sparsiflora* and the var. *breviscapa*. After handling the holotype of the involved taxa, as well as the new information highlighted above, it was clear the var. *longiscapa* had a number of consistent features that justify the new status hereby proposed.

At first glance, the very short floral scape of *V. breviscapa*, not exceeding the leaf sheaths, gives the unique impression that the inflorescence branches start their development directly from the central tank of the plant. Not only is the scape very short, but the fertile axis of the inflorescence itself is also very reduced (4-5 cm long only, excluding the terminal branch), while in *V. sparsiflora* the inflorescence is distinctly longer than the leaves and well elevated above the rosette. These are the most outstanding characteristics of *V. breviscapa*.

However, there are other important features not indicated in the protologue of *V. breviscapa*, like the spreading-recurved to subpendulous branches (vs. suberect), the yellowish-green rachis (vs. bright red), and the greenish-yellow petals, with suberect apex at anthesis, forming a tubular corolla with distinctly included stamens. On the contrary, the petals of *V. sparsiflora* are white or whitish, with distinctly recurved apex at anthesis and exserted stamens that distinctly are exceeding the petals. Also, the petal appendages of *V. breviscapa* are acuminate and the stigma is yellow, but in *V. sparsiflora* the appendages are narrowly obtuse and the stigma has white color. The correlation of all those characteristics allows the proposed status upgrade of *V. breviscapa* from the variety rank to the species level.

Although both species originated from areas covered by remaining Atlantic Forest at altitudes over 500 m, where they grow epiphytically and are scattered throughout the lowers layer of the forest, the populations of *V. sparsiflora* are



E. Pereira

Figure 12. Photograph found in the private files of the late Edmundo Pereira, showing the type-specimen of *Vriesea breviscapa* as handwritten by himself on the back, collected in 1983 at Conceição do Castelo, Espírito Santo. See the open flower on the terminal branch with included stamens.



E. Leme

Figure 13. *Vriesea breviscapa* collected in 1995 in Una, Bahia.



E. Leme

Figure 14. *Vriesea sparsiflora* from Rio de Janeiro: see the open flower on the lateral branch with distinctly exerted stamens.

Figure 15. Type specimen of *Vriesea silvana* collected in 2001 by Edmundo Silva



E. Leme

endemic to the São Paulo and Rio de Janeiro States, while *V. breviscapa* is known just from two collections northward in States of Espírito Santo and Bahia.

***Vriesea silvana* Leme, sp. nov. (Figure 15)**

Speciei *V. jonesianae* Leme, affinis, sed planta haud stolonifera, vaginis foliorum pallide viridibus, laminis foliorum latioribus, nervatis, apice acutis et minute apiculatis, inflorescentia ca. 20 cm longa, bracteis floriferis brevioribus, sepalis sublinearibus, pedicellis brevioribus et antheris basi distincte sagittatis differt.

Type: Brazil, BAHIA: Ibicuí, Mar. 2001, *E. F. Silva s. n.*, cult. *E. Leme 5120*. Holotype: HB.

**PLANT** epiphytic, flowering ca. 65 cm tall, propagating by short basal shoots. **LEAVES** suberect-arcuate, forming at base a funnellform rosette; **SHEATHS** elliptic, 10-11 × 6 cm, subdensely and inconspicuously white-lepidote, greenish, nerved; **BLADES** sublinear, 40-44 × 3.5-4.5 cm, slightly narrowed toward base, green, very inconspicuously white-lepidote to glabrous, distinctly nerved, apex acute and minutely apiculate. **SCAPE** erect, ca. 43 cm long, 3-5 mm in diameter, rigid, greenish, glabrous; **SCAPE BRACTS** oblong-ovate, broadly acute and minutely apiculate, 30-35 × 13 mm, erect, enfolding the scape, inconspicuously white-lepidote, equaling to slightly shorter than the internodes. **INFLORESCENCE** simple, lax, suberect, ca. 20 cm long, rachis subangulose, very slightly flexuous, reddish, glabrous, 2-3 mm in diameter, internodes ca. 20 mm long; **FLORAL BRACTS** ovate, acuminate, 25-30 × 12 mm, base truncate, slightly incurved toward apex, not enfolding the flowers, ecarinate, red toward base and yellow toward apex, glabrescent, equaling about 1/2 of the sepals length. **FLOWERS** ca. 10, anthesis diurnal, distichous, not at all secund, ca. 50 mm long, pedicels ca. 8 mm long, ca. 4 mm in diameter at base and 7 mm in diameter at apex, yellowish-green; anthesis diurnal; **SEPALS** sublinear, apex obtuse to emarginate, 33 × 7-9 mm, very inconspicuously and sparsely white-lepidote, yellowish, free, ecarinate, finely nerved; **PETALS** sublinear, apex narrowly emarginate, suberect at anthesis and forming a subtubular corolla, at least ca. 40 × 9 mm, connate at base for ca. 3 mm, pale yellow except for the green apex, bearing at base 2 obovate, obtusely and minutely dentate, at least ca. 5 × 2 mm large appendages. **STAMENS** equaling to exceeding the corolla; **ANTHERS** linear, ca. 6 mm long, base deeply sagittate, apex obtuse, dorsifixed near the base; **STIGMA** convolute-bladed, green, densely papillose; ovules shortly caudate.

*Vriesea silvana* was found growing epiphytically in moist and shady condition in the Atlantic Forest at low elevation in the region of Ibicuí, Bahia State. It is somewhat closely related to *V. jonesiana* (Leme, 1999), but differs from it by the production of short basal shoots (vs. stoloniferous propagation), pale green leaf sheaths (vs. purplish toward base), broader leaf blades (3.5-4.5 cm vs. ca. 2.7 cm), distinctly nerved and with acute and minutely apiculate apex (vs. acuminate-caudate apex). On the other hand, the new species can be distinguished

from *V. jonesiana* by the shorter inflorescence (ca. 20 cm long vs. ca. 45 cm long), shorter floral bracts (25-30 mm long vs. 38 mm long), the sublinear sepals (vs. narrowly elliptic), shorter flowers pedicels (ca. 8 mm long vs. ca. 15 mm long), and by the anthers with distinctly sagittate base (vs. obtuse base).

This new species honors its collector, the orchid and bromeliad enthusiast, Edmundo Ferreira Silva, who lives in Itororó City, Bahia State. Mr. Silva has greatly contributed to the introduction of many rare and new species into horticulture.

LITERATURE CITED

- Leme, E. M. C. 1999. New Species of Brazilian Bromeliaceae: A Tribute to Lyman B. Smith. *Harvard Pap. Bot.* 4 (1): 135-168.  
Pereira, E. & I. A. Penna. 1985. Species Novae in Brasilia Bromeliacearum - XXII. *Bol. Mus. Bot. Mun. Curitiba* 62: 1-8. Rio de Janeiro, Brazil

**A New and Attractive *Aechmea* Species from the State of Bahia, Brazil**

**Bruno Rezende Silva<sup>1</sup> & Harry E. Luther<sup>2</sup>**

***Aechmea amicorum* B. R. Silva & H. Luther, sp. nov. (Figures 16-18)**

A *A. blanchetiana* (Baker) L. B. Smith, cui affinis, bracteis florigeris brevioribus, sepala non superantibus, margo non flavus, Inflorescentia minoribus.

**Type:** BRAZIL. Bahia State, Porto Seguro, south to Trancoso, about 50 m alt. 19 Aug. 1995. *W. Berg & J. Anderson 40*, fl. cult. at the Marie Selby Botanical Gardens (SEL 96-76), Feb. 2001, (Holotype: HB; Isotypes: SEL, CEPEC, R).

**Plant** terrestrial, propagating by short basal shoots, flowering 80-120 cm high. **Leaves** ca. 15 in number, suberect to arching, forming a crateriform rosette, 60-100 cm in diameter. **Sheaths** ovate, 12-17 cm long, 10-14 cm wide, proximally whitish brown on adaxial surface and brown on abaxial surface, distally green, subcoriaceous, entire, with dense minute appressed brown trichomes on both surfaces, especially on abaxial surface. **Blades** ligulate, rounded and acuminate, slightly narrowed and channeled toward base, 45-90 cm long, 6-8 cm wide at middle portion, light green to yellowish green, subcoriaceous, with dense pale appressed trichomes specially on abaxial surface,

<sup>1</sup> 1: Living Collections Curating Office, Rio de Janeiro Botanical Gardens: [brsilva@jbri.gov.br](mailto:brsilva@jbri.gov.br)

<sup>2</sup> Director, M. B. Foster Bromeliad Identification Center, Marie Selby Botanical Gardens, 811 South Palm Ave., Sarasota, FL 34236, USA.



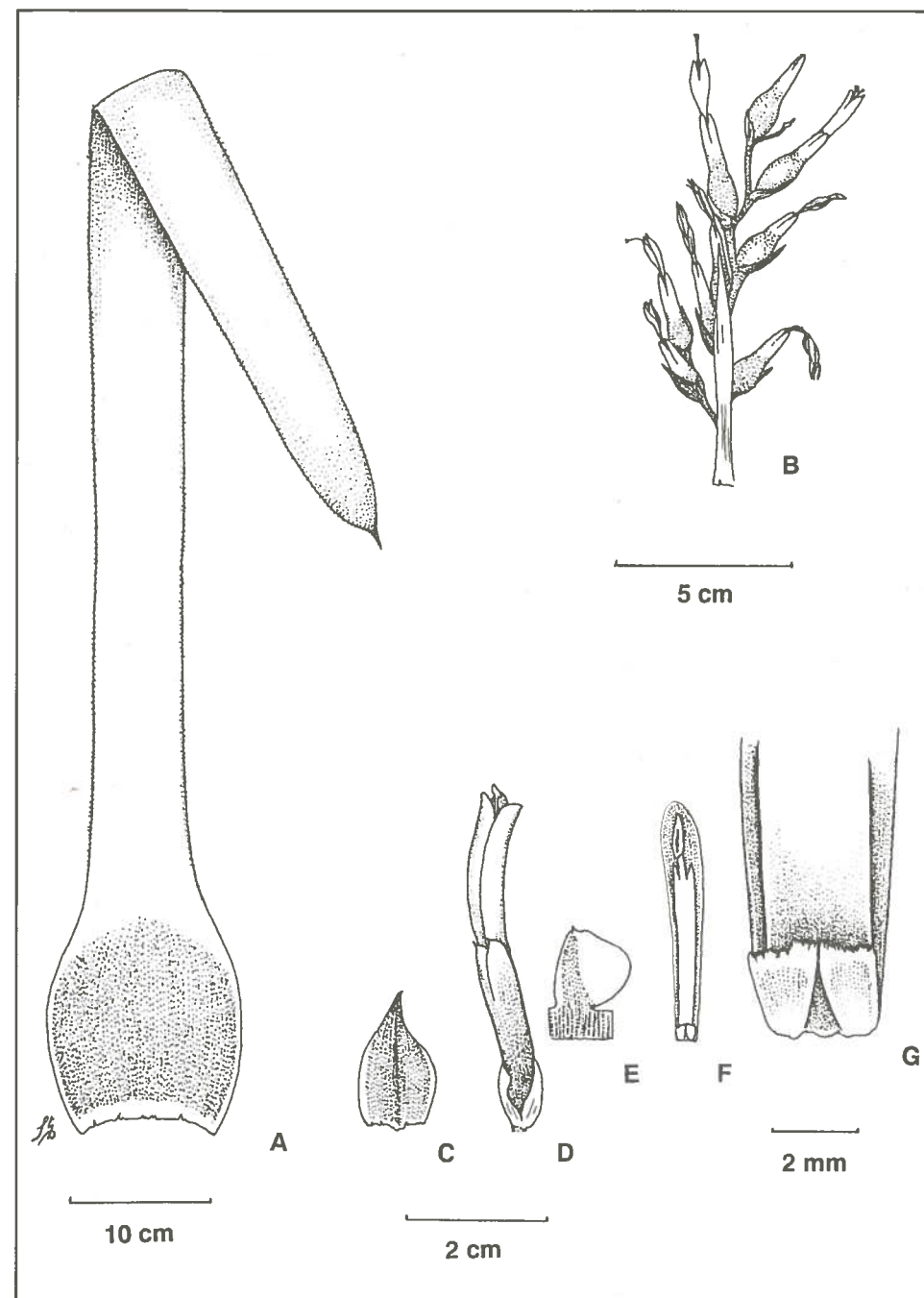
Figure 16. Clonotype of *Aechmea amoricum* flowering at Marie Selby Botanical Gardens.

B. Rezende Silva



Figure 17 *Aechmea amoricum*: closeup of flowers.

B. Rezende Silva



Stig Dalstrom

Figure 18 *Aechmea amoricum*. A. Leaf; B. Inflorescence branch; C. Floral bract; D. Flower; E. Sepal; F. Petal; G. Petal scales.

serrate, spines spaced ca. 4 mm, at base straight, brown and 4 mm long to antrorse, greenish brown and 1 mm long at apex. **Scape** stout, erect, 40-60 cm long, 8-12 mm in diameter, internodes light rose, 6-8 cm long, sparsely pale lanate. **Scape bracts** exceeding the internodes, 10-15 cm long, 3-4 cm wide, imbricate and completely covering the scape, elliptic and apiculate, apiculus ca. 7 mm long, the basal ones greenish, the upper ones reddish rose, subchartaceous, densely appressed lepidote abaxially, sparsely appressed lepidote adaxially, entire at base to sparsely serrulate distally, spines ca. 0.5 mm long. **Inflorescence** erect, conical, proximally tripinate, distally bipinnate, laxly flowered, 30-50 cm long, 20-30 cm wide at base, rachis stout, reddish orange, sparsely pale lanate. **Primary bracts** elliptic, acute, 2-12 cm long, 1-3 cm wide, entire, exceeding the sterile base of the branches, sparsely lepidote abaxially, glabrescent adaxially, subchartaceous, mostly reflexed at anthesis, reddish wine. Primary branches ca. 15 in number, 5-9 flowered, 4-17 cm long, including a reddish orange, 8-25 mm sterile, naked and dorsiventrally flattened base, the basal ones spreading 80° from the main axis, the upper ones 45°. **Secondary bracts** lanceolate, acute, 2-3 cm long, ca. 5 mm wide, reddish wine, inconspicuously lepidote abaxially, glabrescent adaxially, subchartaceous. **Secondary branches** 2-4 flowered, 5-7 cm long, including a ca. 1 cm long sterile, naked base. **Floral bracts** ovate, acute, carinate towards apex, decreasing in size towards apex of branch, 10-25 mm long, 4-7 mm wide, much shorter than the sepals, reddish rose, papyraceous, glabrescent. **Flowers** subdistically arranged, slightly zygomorphic, spreading ca. 30° from the main axis, ca. 45 mm long. **Pedicels** cylindrical, 2-3 mm long, light rose, glabrous. **Sepals** elliptic lanceolate, mucronulate, inconspicuously carinate at apex, strongly asymmetrical, 14 mm long, 8 mm wide at wing, connate for 4 mm, chartaceous, rose colored with hyaline margins, glabrous. **Petals** ligulate, free, spreading at anthesis, 35 mm long, 6 mm wide, whitish at base to yellow at apex, membranaceous, with two longitudinal 24 mm long callosities, bearing two truncate, fimbriate, hyaline, 2 mm long basal appendages. **Stamens** included at anthesis. **Filaments** dorsiventrally flattened, hyaline, 30 mm long, ca. 1.5 mm wide, the antipetalous ones adnate to petal for ca. 20 mm, the antisepalous ones free. **Anthers** oblong, base obtuse, apex acute, dorsifixed near the middle, 6 mm long, 1.5 mm wide. **Style** linear, ca. 35 mm long, 0.5 mm in diameter, whitish; **Stigma** initially included, exerted as anthesis proceeds, conduplicate spiraled, conical, ca. 2 mm long, ca. 1.5 mm in diameter, yellow, bearing many inconspicuous, very short papillae. **Ovary** ellipsoid, slightly constricted at apex, 9 mm long, 6 mm in diameter, rose colored, placentation central; **Ovules** short caudate, ca. 0.7 mm long. **Epigynous tube** ca. 4 mm long. **Fruit** ellipsoid, 12-15 mm long, 11-13 mm in diameter, shiny rose.

## PARATYPES:

BRAZIL: Bahia State, Porto Seguro to Trancoso, less than 50 m alt. 19 Aug. 1995. *W. Berg & J. Anderson* 43, fl. cult. at the Marie Selby Botanical Gardens (SEL 96-78), 24 Mar. 2000, (SEL); Brazil, Lost label but known to have been collected in coastal Bahia, fl. cult. Berg's private collection, *W. Berg & J. Anderson legit.*, 23 Feb. 1999, *W. Berg s. n.* (SEL); Brazil, Espírito Santo State, Linhares, Reserva Florestal de Linhares, Estrada Municipal Nativo-Imbiriba, Km 1.1, terrestrial, 6 Jan. 1999. *D. A. Folli* 3330 (SEL).

This large terrestrial bromeliad was found in open restinga forest with *Aechmea blanchetiana* and a *Hohenbergia* species. It has been collected in the states of Bahia and Espírito Santo.

It resembles *A. blanchetiana* in overall appearances but can easily be distinguished by its shorter and wholly reddish rose floral bracts (10-25 mm vs. 30-35 mm long) that are much exceeded by the sepals (vs. about equaling them and with yellow margins). From the related *A. fraudulosa* Mez, also from the State of Bahia, *A. amicorum* differs by its lax, not at all imbricate, shorter (10-25 mm vs. 30 mm long) floral bracts; From the somewhat similar *A. eurycorymbus* Harms, from Paraíba and Pernambuco, by its low connate (not free) sepals and longer (35 mm vs. 20 mm long) petals. In addition, the inflorescence of *A. eurycorymbus* is much broader and more laxly flowered.

The specific epithet is based on the long friendship of the co-collectors, John Anderson and the late Wally Berg

## ACKNOWLEDGMENT

We thank the collectors for donating a living specimen of this new species to the research collection of the Marie Selby Botanical Gardens and thank Stig Dalström for the illustration.

## Housekeeping

PLEASE NOTE: Effective with this issue, the new address for the editor of the Journal of the Bromeliad Society is: **Editor, Journal of the Bromeliad Society;**

2549 Sunnyside St., Sarasota, FL 34239-4735.

Telephone (941) 365-2080

E-mail: editor@bsi.org

Those affiliates that send copies of their newsletters should update their records. Not all affiliates are sending copies of their newsletters to the editor of the Journal, even though there are advantages to both the BSI and the affiliates for doing so. It provides the editor with a source of appropriate articles for reprinting in the Journal as needed and it benefits the affiliates in providing information for calendar item listings.

All correspondence relating to the Journal, including submission of articles for consideration for publication in the Journal and all requests for information on advertising rates and deadlines should be sent to the new address.

Requests for membership information should continue to be addressed to the membership secretary:

**BSI Membership Secretary,**

P.O. Box 12981, Gainesville, FL 32604.

Telephone (352) 372-6589.

E-mail BSI@nersp.nerdc.ufl.edu

Donations may be sent to either of these two addresses, or directly to the treasurer of the BSI. @ **BSI Treasurer, 1119 Lisa Lane, Kingwood, TX 77339**

## Charcoal, The Forgotten Ingredient

Rex Hardy

When I was a young man, one of my memories of helping my late father with his cacti in his large glasshouse, was the way he always included charcoal in his potting mixes. Up until recently, I always thought the idea of this was to help drainage of the potting mix, but a small article in one of my father's cactus books told me otherwise.

In the days of wood fires, charcoal was plentiful, and the benefit to potting mixes was well recognized. It appears that as our wood fires have disappeared from the scene, so has the use of charcoal, yet its benefits are still there.

It should be noted that charcoal has no food value in itself. However, it does have several important uses for plants and potting mixes. One of the most important is that it acts like a magnet and a sponge collecting and conserving ammonia. This remarkable function is one of the marvels of science yet no one has been able to explain why. If pieces of charcoal are in the soil, roots will cling to them to absorb the collected ammonia.

When organic fertilizer decomposes, one of the first products given off by the bacteria is ammonia gas. This gas is extremely volatile and easily escapes, but if a grain of charcoal lies next to a grain of fertilizer, it will absorb 80 times its own bulk in ammonia and will hold it, a trait that plant roots utilize. It is the ammonia-forming capacity of bone meal, fish meal, natural manure, compost and other such organic fertilizers that we pay for, and the gas should not be allowed to escape.

Charcoal has other equally valuable properties. It is the world's most perfect purifier. It acts as a continuous factory for the destruction of injurious acids. Whenever evil organic gases are given off, charcoal will absorb the odor. A sprinkling of charcoal over the compost heap will not only prevent odor but will conserve ammonia. After purchasing the charcoal, break it into half-inch pieces by placing it on a large piece of plastic and breaking it with a hammer. Further benefits that plants receive by incorporating charcoal in your potting mixes include: 1) It checks damping off of seedlings; 2) When cuttings are started in water it encourages root growth and keeps the water fresh;; 3) Charcoal in potting mixes also sweetens the soil and saves fertilizer; 4) Last, but not least, it helps to open up the potting mix as well as helping in the drainage.

If you are now using Perlite in your potting mix why not substitute some of it with some small pieces of charcoal?

*Reprinted with minor revision from the publication of the Bromeliad Society of New Zealand, 38(4):6, May 1998. The article originally appeared in the Journal of the Epiphytic Cacti and Hoya Society of Australia Inc., Vol 11(1), July-Sept 1996.*

## Repot? Divide? Do Nothing?

Penrith Goff

Now it's September and the bromeliads that bloomed for you in the spring have good-sized pups and the plants are getting a little big for their pots. You have a feeling you should do something but are a bit unsure as to what. Should you divide? Or should you just shift to a larger pot?

The decision depends on what you want the mature plant to look like. Specimen plants with two, three, or more blooms are very impressive. But they demand two, three, or more times the space of the single original plant. So even if it's tempting to grow bigger and bigger plants, they are not going to flourish and will not look nearly as good as a single plant if there is not enough space to accommodate them.

The decision to divide or just to repot will also depend on the type of plant in question. The Pink Quill (*Tillandsia cyanea*) is not much bigger when it has four or five growths than when it has only one and I would leave the clump undivided in the hope of getting several blooming spikes at once, a much more striking effect than a single spike provides. Bromeliads with long, slender tubes such as billbergiad look better when the pot is full of growths and certainly the effect is much more spectacular when the plants bloom. (Don't worry about the plant being "potbound": epiphytic bromeliads enjoy being underpotted!) I like to leave the green-leaved vrieses in their pots after they bloom. A plant will produce two or three pups which soon completely hide the mother as she gradually fades away. The plant does not have to be repotted but one must bear in mind that when the pups are mature, the plant will be two or three times larger than the original. The pups usually bloom at the same time. The vase-type bromeliads, with their flaring rosettes--Silver Vase (*Aechmea fasciata*) and neoregelias, for example, develop better symmetry if grown singly. Indeed, they are often rather large plants and quickly become unwieldy if there is more than one growth in the pot.

You may not need to repot if there is room for new pups and the planting medium still drains well. If you want to increase the number of pups without repotting, separate the pup from the mother plant as soon as it shows roots at its base or has attained 2/3 the size of the mother plant. This is easily done by cutting through the stolon (stem) connecting mother to pup. Neither plant is disturbed in the process. If there is no stolon and the pup grows tight against the mother, separation is trickier: one must be careful not to injure the base of the pup. Separating the pups from the mother will stimulate the mother to produce more pups, a process which can continue until the mother finally has no leaves left.

Sometimes in repotting a plant we find the roots partially or even completely rotted away, usually the result of water collecting in the pot instead of freely draining out. If the plant itself shows no rot, loss of roots is not a problem.

The plant can be placed in new medium, staked or otherwise firmly anchored, and it will soon grow new roots. While many different mixtures are used for growing bromeliads, a good and easy-to-mix medium is a mixture of Canadian peat moss with perlite. Use enough perlite (1/4 to 1/3) to guarantee that, as the peat compacts over time, drainage will remain fast and complete. I like to add fine cypress mulch to my mixture to help keep the plants in place until they have developed a root system.

Should you fertilize? Bromeliads do remarkably well without the use of fertilizer—after all, in their natural setting they do not get a large supply of nutrients. But as houseplants they do not get the nutrients brought by wind and rain in the natural setting. So it makes sense to fertilize and in general they respond well to fertilizing. Application should be only half the dosage recommended on the label. In the case of Billbergias and Neoregelias with highly colored leaves, fertilizing should be very modest since it tends to mute the color and markings, and may lead to ungainly oversized leaves, particularly if available light is not strong (part sun). If the nitrogen in the fertilizer is ammoniacal, as in Schultz Bloom Plus™ or fertilizers designed specifically for bromeliads, the nitrogen will be available through the leaf surfaces. The plant will then benefit from being misted or drenched with water containing the fertilizer.

*Northville, Michigan*

*Reprinted from SEMBS the September-October 2002 newsletter of the Southeastern Michigan Bromeliad Society,*

## **The “Right” Potting Medium and Pots**

### **Herb Plover**

We have published many articles over the years about the right potting mix to use for different indoor grown bromeliads. Yet at our meetings, recent “Show & Tell” plants with mixes either too soggy or insufficiently water retentive indicate there is still a need to periodically revisit this issue. We also need updates periodically because the quality of potting materials changes, they become scarce or unavailable and new kinds of promising ingredients come onto the market that should be tested.

We always have some members who are relatively new to growing bromeliads and would profit from a review of the basic principles of a “proper” mix. I place quotation marks on the word to emphasize that different growers have their own formulas that they find right for them. It is a good idea to try different mixes to find what works for your plants under your growing conditions and with the kinds of pots you use. For instance, clay pots are heavier and more stable than plastic pots (especially for large plants), but they allow the moisture in the mix to dry out more quickly than plastic pots and generally work best in a the high humidity of a greenhouse. Azalea plastic pots have a wide base for

stability. Even a very large plant with a slight lean won’t topple over in a 5 1/2 or 6-inch pot. I use 4 1/2, 5 and 5 1/2-inch pots and rarely use 4 or 6 inch pots.

The problem is that these have become both scarce and very expensive. It is almost impossible to find 4 1/2 or 5 1/2-inch plastic pots as they now typically come only in 4, 5 and 6-inch sizes. We used to order a box of 250 pots of thick plastic pots at a cost of about 5 to 10 cents each, but now even the smaller ones in a thinner plastic cost over 50 cents. I’m glad I started to keep all my used pots many years ago. By thoroughly scrubbing and cleaning them I have a constant supply of all sizes.

As for the potting mix, I generalize the basic principles as follows:

1. The mix must be very porous so that it drains quickly and has many air spaces that will permit the roots to breath. Remember that in habitat most of your bromeliads grow as epiphytes on tree branches or on rocks and their roots require aeration. But if you do top watering to the medium in a pot, the mix tends to pack down after about a year and lose aeration capability causing it to soon become soggy. Test the porosity of the mix to see that the water drops right down and drains out the bottom of the pot without staying at the top for any time. This means the mix should have many large pieces at least 1/4 inch in size. I use one or a combination of friable ingredients such as giant perlite, bark chips and/or shavings (I like redwood shavings), shredded tree fern (too expensive and hard to find), cork bark, Styrofoam pellets, etc. In truth, anyone of these coarse materials will work well to create porosity.
2. Still the porous mix must have a sufficient amount of water retentive materials such as peat moss to encourage root growth and water uptake. Redwood shavings also are water retentive while still being a good drainage material. I have found that a proportion of about 70% friable materials to about 30% water retentive ingredients works well. In the early days of our society, we were able to find German peat moss that was so coarse and stringy you could use it straight in the pot. As the saying goes: “Those days are gone forever”. I have been able to find 2 cubic foot bags of Canadian peat that had sufficient chunks in it so that I could mill the stuff on overlapping pieces of chicken wire. I retain only the chunks and throw out the powder (about 1 cubic foot of waste out of a 2 cubic foot bag). I don’t use Michigan peat as it is almost all powder which washes out the bottom or else it packs down and limits aeration.
3. The mix should be damp but not soggy. Sogginess promotes fungus and root rot. To get the right amount of dampness, I have used wick watering on my plants with considerable success over many years.
4. The pH of the mix should be on the acid side, preferably 5.5 to about 6. Bromeliads definitely do not like a “sweet” alkaline mix. We are lucky that our New York tap water has been consistently around pH 6 and the

use of materials like peat moss, tree fern and bark further acidifies the mix. I haven't tested our tap water recently, but I'm confident it is still around a pH of 6, as the constant acid rain the northeastern United States has received in recent years has likely fallen on our reservoirs.

Most growers may find it difficult to acquire and store the materials needed for a mix. Commercial bromeliad nurseries purchase specially made formulas of mix in large bulk, usually from Fafard, a producer and a supplier of Canadian sphagnum peat moss, professional growing mixes, retail soils, and landscape bark products. Only a few of the ones I've seen have large pieces in them as they have been milled down to create a fairly light mix, which does drain, and is a good promoter of root development. Unfortunately, the minimum size order from Fafard is too big for even a combined order from our society members to be feasible. Some plant shops now sell commercial mixes that state they are designed for bromeliads. If your plant shop sells any of these in small packets try one with the largest pieces. It still can become soggy so test it for drainage and add some large perlite or chips to the mix as needed. If you can only find an orchid mix you will need to add more water retentive materials, because these mixes are mostly large bark chips which will give great aeration but won't promote rooting and won't be able to feed water to the roots. This will result in dry, brown leaf tips.

I have recently started experimenting with coconut fibre husks, a material that has been around for many years but I never got around to trying. At the World Bromeliad Conference in San Francisco, I was looking for bargains at the Bird Rock Tropical's booth when I noticed that they were growing atmospheric tillandsias in pots of coconut fibre. I spoke to Wayne Schuster about it and Wayne pulled out several pieces of coconut husk from a pot and squeezed them. I was amazed to see a quantity of water oozing out.

When I got home from the conference, I ordered some 1/4 cubic foot packs of medium 1/4 inch coconut-fibre husks from OFE International in Miami but I didn't start using the stuff until recently. After soaking it, I have been using it straight as the only ingredient. It clearly drains well and the pieces seem to be highly water retentive, even after 4 weeks without watering. What has to be determined is whether it will promote good root growth and if it will not stay too soggy. If this should be the case the simple remedy is to add some perlite or bark chips to the mix. Since the fibre appears to stay wet for a long time I have stopped using wicks with this medium.

Coconut fibre can also be used together with other materials both for drainage and water retention. It also comes in finer, small pieces, which I plan to test. We can get a 1/4 cubic foot bag for about \$5.00. This is enough to fill about 15 pots.

*New York, New York*

*Reprinted from Bromeliana, the newsletter of the New York Bromeliad Society. 37(8). December, 2001.*

## **The Huntington Library, Art Collections and Botanical Gardens**

**Brian Dawson**

The Huntington is one of America's great cultural and educational centers. It includes a library collection of four million items, spanning one thousand years of British and American history and literature; an art collection consisting of 18th and 19th century British, French and American paintings, sculpture and furniture; and of course the gardens, covering 150 acres, with fifteen theme areas and at least 15,000 varieties of plants from around the world.

Henry Edwards Huntington was a very successful businessman and visionary, but most of all he was a collector. Recognizing the potential of the Los Angeles basin, he bought the six hundred acre ranch, San Marino, in 1903. Apart from laying the foundations for the light rail and electricity systems of the city, he created a magnificent site to house his collections. In 1919 he founded a research institution to serve scholars. The deed of trust establishing guidelines for the Huntington Institution allowed for growth and flexibility to meet changing conditions.

William Hertrich was hired to help design and build the extensive botanical gardens, which became the repository of many rare specimens. The Desert Garden was started in 1907 and covered 25 acres. By 1927 half the area had been developed. In the late 1930's, Dr. T.H. Goodspeed, of the Department of Botany at the University of California, collected seeds of terrestrial bromeliads on field trips to the Andes. Plants raised from these seeds formed the basis of the huge groups of puyas and pitcairniae seen today.

The founder of the Bromeliad Society, Joseph Schneider, started working for the Huntington Botanical Gardens in April 1949. During his seventeen years there he planted and nurtured many more species of terrestrial, xerophytic bromeliads, including hechtias, dyckias, bromelias, acanthostachys and deuterocohnias, not to forget ananas.

The gardens are situated at 1151 Oxford Road, near Pasadena, California.. Phone 626-405-2100 and the web site is [www.huntington.org](http://www.huntington.org). They are a 'must see' for plant enthusiasts visiting Los Angeles and there are blossoms throughout the year.

*Reprinted from the publication of the Bromeliad Society of New Zealand newsletter, 41(8):20. August 2001*

## Meet the New Editors

### Chet Blackburn

This issue, the 41<sup>st</sup> since I became editor seven years ago, is the last issue that will be released during my tenure as editor. During that time I've met many great people and made some wonderful friends, but the time has come to turn the job over to someone else.

The BSI is fortunate in having a well-qualified and highly capable husband and wife team to take over as editors beginning with the next issue. Bruce Holst was elected to the position of editor of the *Journal of the Bromeliad Society* at the BSI Board of Director's meeting in St. Petersburg, Florida in May. In naming Bruce, the BSI will also gain the services of spouse Susan Murphy who will serve as co-editor. This extra help should be of great benefit in the time consuming task of assembling six issues of the *Journal* a year.

Bruce has been on the staff at Selby Gardens for the past eight years. He currently serves as Director of Plant Collections and Scientific Publications at Selby and is editor of *Selbyana*, the journal of the Marie Selby Botanical Gardens. He is also a co-editor of the nine-volume series of books, *The Flora of the Venezuelan Guayana* published by the Missouri Botanical Garden. He has been a contributor to the *Journal of the Bromeliad Society*. He is a member of the American Society of Plant Taxonomists, the American Botanical Society, and of course the Bromeliad Society International.

Bruce received his BS degree in Botany from the University of California at Davis in 1980. He served in the Peace Corps as a botanist, plant pathologist, and teacher in Honduras for the next four years. During that time he was instrumental in establishing a herbarium at the local agricultural school and was engaged in developing an inventory of the flora of central Honduras.

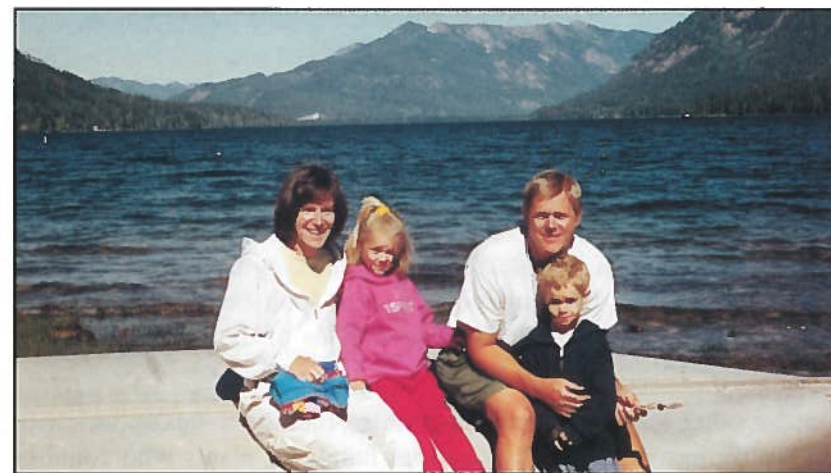
In 1984 he joined the staff of the Missouri Botanical Gardens where he took part in 11 expeditions, most of them to southern Venezuela in conjunction with his work as co-editor of the *Flora of Venezuelan Guayana*. He began working at Selby Gardens in 1994.

He has now been studying and collecting plants of the American tropics for twenty-two years, with a special interest in the family Bromeliaceae and the floras of Belize and Venezuela. He has received funding in his research efforts from such organizations as Conservation International, the National Science Foundation, and the Smithsonian Institution. His involvement in Conservation International's Rapid Assessment Program has included working as a botanist on RAP teams that surveyed an area of the Maya Mountains in southern Belize in 1992 and remote forests of southern Bolivia in 1995. In 1998 he took part in a RAP expedition to survey the flora and fauna in the rainforests of the Vilcabamba Range in south-central Peru. In 2001 he led two expeditions supported by the Disney Conservation Fund to study the habitat of the endangered scarlet macaw in Belize.

Susan's credentials are also impressive. She graduated in 1984 from Cornell College in Mt. Vernon, Iowa with a B.S. in Biology and Environmental Studies. She completed her M.S. in Botany at the University of Iowa in Iowa City in 1987. Her emphasis was on Bryology, the study of mosses.

From 1985 to 1987 Susan taught introductory botany at the University of Iowa and assisted in curating the Bryophyte Herbarium at that institution. From 1987 to 1990 Susan worked as a Herbarium Assistant at the Missouri Botanical Gardens in St. Louis. In 1990 she moved on to the Washington University School of Medicine, also located in St. Louis. She received NCA certification in Cytogenetics and worked as a Cytogenetics Technologist preparing tissue cultures and karyotypes from blood, bone marrow and skin specimens during the four years she spent at the school of medicine.

Since the birth of their two children, Leah and Ian, Susan has remained at home doing freelance work including assisting editing manuscripts for *Selbyana*.



Holst

Figure 19. The new editors and staff. Left to right; Susan Murphy, Leah, Bruce Holst, and Ian.

While both Bruce and Susan have excellent credentials, they cannot do the job by themselves. They will need your help. I can emphatically confirm that based on my own experience as editor. I would guess that for at least 30 of the 41 issues I edited, there was not enough quality material available at the deadline to include in those issues. This requires the editor to either write material to fill the gap or search through other appropriate publications for relevant material to reprint that has not already been widely distributed. With the increased popularity of the Internet, finding material that has not already had wide distribution has become an increasingly difficult task.

Over the years, current and past editors have striven to produce a publication that is both a quality scientific journal as well as a publication that

would be equally interesting to hobbyists and other lay people. Nonetheless, we recognize that some hobbyists regard the *Journal* as being "too technical" while some scientists feel that it "contains too much fluff". The intent has always been to provide readers with about 50% technical material and 50% non-technical.

The problem is that while the scientific community has been active in providing material for publication, and there is often a surplus of technical material to draw from, there is almost always a dearth of non-technical material. This in spite of the fact that our membership includes the most talented, well-traveled, and knowledgeable bromeliad growers on earth. Anyone who can write an informative article for their local newsletter, or prepare a slide program on a topic that can hold the attention of affiliate members during a meeting, should find it easy to convert those endeavors to an article of interest to *Journal* readers, but few do. Articles on cultivation, tips on photography, tips on preparing plants for show, information about the best collections in your area, your encounters with bromeliads during your travels, and the occasional fascinating, odd, or humorous things that we all encounter while wandering through our own collections are all areas of interest to other growers.

At last count, well over 100 scientific institutions in at least 20 countries on 6 continents are included among our subscribers. They include not only such diverse and famous organizations as the Smithsonian Institute, Kew Gardens, Germany's Palmengarten, the World Wildlife Fund, and Harvard's University's Gray Herbarium, but also less internationally known organizations such as the William Poulton Library in Durban, South Africa, the Quad City Botanical Center in Rock Island, Illinois, and the Bulatan Ipoh Garden, Ipoh Perak in West Malaysia. Hopefully the *Journal* is meeting the requirements of these diverse professional groups.

On the other hand, our subscribers also include a steady influx of new people recently introduced to this unusual family of plants who could benefit greatly from the experiences of long-time growers. We could certainly improve on the amount of cultural information available to them if some of our experienced members would only take the time to submit articles to the *Journal*.

In bidding farewell, there are many people I would like to thank for their cooperation and assistance over the last seven years. I thank the members of the editorial review board, the officers and directors of the BSI for their consistent support, and our advertisers. I especially want to thank the people who have submitted articles. There would be no *Journal* without them. A special tip of the hat to Robert and Virginia Guess, Elton Leme, Jason Grant, and Harry Luther who have been the most prolific contributors during the last seven years.

The *Journal* is in good hands. You can help the new editors by providing them with enough material so that they do not have to do the typical last minute scrambling that is one of the biggest challenges to getting the *Journal* out on time. I can think of no better way to welcome them.



## Tropiflora's CARGO REPORT

***It's not just a catalog,  
It's an adventure!***

- ★ Catering to the collector with a fantastic variety of rare and unusual bromeliads as well as other unusual and exotic plants from the world over.
- ★ The best source for the professional with acres of stock under cover for instant service.
- ★ Information packed, with cultural tips, nomenclature updates, travel tips, collecting adventures and much more!

***Tropiflora***

Phone 1-800-613-7520  
Fax (941) 351-6985

**Six issues per year. Free trial subscription to BSI members.**

**Tropiflora • 3530 Tallevast Rd. Sarasota, FL 34243**

Visitors welcome 8 til 5 Mon. to Fri. and until noon Sat.

**Advertising space in the *Journal of the Bromeliad Society* is available at the following rates:**

| <b>ALL ADVERTISING<br/>PREPAID</b>                      | <b>Rates<sup>1</sup></b> | <b>One Issue</b> | <b>Six Issues</b>     |
|---|--------------------------|------------------|-----------------------|
|   | Full Pages               | \$125.00         | \$625.00 <sup>2</sup> |
| <b>Advertisers to provide<br/>any art work desired.</b> | 1/2 Page                 | 70.00            | 350.00 <sup>2</sup>   |
|   | 1/4 Page                 | 45.00            | 220.00 <sup>2</sup>   |
|   | 1/8 Page                 | 25.00            | 125.00 <sup>2</sup>   |

<sup>1</sup> Cost for color ad furnished on request. <sup>2</sup> Plus \$25.00 per ad change.

Advertising is presented as a service to our membership and does not necessarily imply endorsement of the product. Please address all correspondence to: Editor—Chet Blackburn, 720 Millertown Road, Auburn, CA 95603

### **Fifty-year Index of The *Journal of the Bromeliad Society***

AVAILABLE NOW

\$30 plus postage

A 384 page index to more than 10,000 pages of material from 1951 through 2000.  
Separate sections for plants, people and titles and topics.

May be ordered through BSI Publications, 2265 W. 239<sup>th</sup> St., Torrance, CA 90501 or through the BSI Web site at BSI.ORG.

Introducing  
**"Blooming Bromeliads" Text Only**



Bromeliad enthusiasts across the globe are frequently asking for our book, "Blooming Bromeliads." Unfortunately, the original English version has been out of print for quite some time. Printing another edition would be too costly. We therefore decided to publish the English text with the German and Spanish edition. The Latin names are the same. "Blooming Bromeliads Text Only" is 88 pages in size and is easy to cross-reference with the color pictures of "Blühende Bromelien" or "Bromeliáceas en Flor."


US \$99 for one "Blühende Bromelien" or "Bromeliáceas en Flor" + English text. Minimum 3: US \$85 each and 6: US \$80 each. Cheques will be cashed before shipping. Postage, packaging and handling anywhere in USA: One "Blühende Bromelien" plus English Textbook \$7, each additional copy \$1.50. Special shipping requests including all foreign countries. Ask us by fax.



General Distributor:




**Bodé Export Corp., 48 N.W. 29<sup>th</sup> Street, Miami, FL 33127**  
**Phone (305) 573-2525, Fax (305) 573-0209**  
**www.bromeliads.org**





*Specialty of  
the House:  
Tillandsias  
from Russell's  
Bromeliads*

*Wholesale &  
Commercial Sales*



1690 Beardsall Avenue  
Sanford, Florida 32771  
407-322-0864  
800-832-5632  
FAX 407-323-4190

|  |   |
|--|---|
| <p>You are invited to join<br/> <b>THE CRYPTANTHUS SOCIETY</b><br/> <small>the largest affiliate of The Bromeliad Society, Inc.</small></p>  <p><i>learn how to grow the<br/>dazzling Earth Stars<br/>and make new friends<br/>all over the world.</i></p> <p>Membership (\$15 USA) (\$20 International) includes<br/> four colorful issues of <i>The Cryptanthus Society Journal</i><br/> Ongoing Research and Plant Identification • Cultivar Publication<br/> Slide Library • Cultural Information Exchange • Registration Assistance<br/> International Shows with exhibits, seminars, tours and plant sales</p> <p>Send SASE for culture information<br/> or \$3.00 for a sample journal to:<br/> Carole Richtmyer, Secretary<br/> 18814 Cypress Mountain Dr.<br/> Spring, TX 77388 USA</p> | <p><b>Bromeliad Society, Inc.</b></p> <p><b>SEEDS</b></p> <p><b>For Sale or Trade</b></p> <p>HARVEY C. BELTZ, SEED FUND CHAIRMAN<br/> 6327 South Inwood Road<br/> Shreveport, LA 71119-7260</p> <p>Send stamped, self-addressed envelope<br/> for listing of available seeds.</p> |
|  <p><b>BROMELIAD ART</b><br/> BY<br/> DON E. LEE</p> <p>FULL COLOR NOTE CARDS<br/> PEN &amp; INK</p> <p>L.E. COLLECTOR PLATES<br/> ORINIGAL WATER COLOR</p> <p>SIGNED &amp; NUMBERED LIMITED EDITION PRINTS</p> <p>Email: del_art@hotmail.com<br/> 2393 Laurelfeld Drive • Grayson, GA 30017 • Phone (770) 972-4607</p>   | <p><b>WANTED</b></p> <p><i>Aechmea spectabilis var. variegata</i></p> <p>John Anderson<br/> Epiphitmy Extension Station<br/> P.O. Box 5202<br/> Corpus Christi, TX 78465-5202</p>   |

## Michael's Bromeliads

*Providing a unique selection  
of quality Bromeliads*

Send for **free** catalogue of nearly  
1500 varieties from over 40 genera

**Specializing in Neoregelia**  
**Now featuring the Don Beadle**  
**Billbergia Collection**

Mail order or by appointment

Michael & Donna Kiehl  
973 First Dirt Road  
Venice, FL 34292

(941) 488-4011  
Fax: (941) 488-1002  
MikesBroms@aol.com

Shipping Worldwide since 1986



## SOCIEDADE BRASILEIRA DE BROMÉLIAS

The journal **BROMÉLIA** is a quarterly publication of the Sociedade Brasileira de Bromélias, a civil non-profit organization aimed at promoting the conservation, dissemination and development of cultivation technique and scientific research of Bromeliaceae in Brazil.

SOCIEDADE BRASILEIRA DE BROMÉLIAS  
Caixa Postal 71034  
21015-970, Rio de Janeiro, RJ, Brazil



## BROMELIAD BOOKS

Send for FREE 28-page catalog featuring  
172+ cactus books, + orchid, bromeliad, fern,  
South African, desert, stationery.

Sent surface mail anywhere in the world!

**RAINBOW GARDENS BOOKSHOP**  
1444 E. Taylor St. Vista, CA  
Phone 760-758-4290 92084  
visa/mc wwcome

## Cactus & Succulent Society of America Invites You to Join!

As a member you will receive:

- A Subscription to the *Cactus and Succulent Journal* (6 issues)
- Voting Privileges
- CSSA Newsletters

To begin your membership, send a check or money  
order for \$35 (U.S., Canada, Mexico) or \$35 (other  
countries) in U.S. dollars drawn on U.S. bank to:

CSSA, P.O. Box 2615  
Pahrump, NV 89041-2615



## Bird Rock Tropicals

**Specializing in Tillandsias**  
6523 EL CAMINO REAL  
CARLSBAD, CA 92009  
TEL: 760-438-9393  
FAX: 760-438-1316

Send SASE for price list

VISIT OUR WEB SITE AT: WWW.BIRDROCKTROPICALS

## The Bromeliad Society International

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

### OFFICERS AND DIRECTORS

President – Tom Wolfe, 5211 Lake LeClaire Road, Lutz, FL 33549  
First Vice-President – Jack Reilly, 248 Lawrence St., Illiopolis, IL 62539  
Vice-President, World Conference – Vacant  
Editor – Chet Blackburn, 720 Millertown Road, Auburn, CA. 95603  
Membership Secretary – Carolyn Schoenau, P.O. Box 12981, Gainesville, FL 32604  
Secretary – Rusty Luthe, P. O. Box 1556, Honoka'a, HI 96727  
Treasurer – Don Garrison, 1119 Lisa Lane, Kingwood, TX 77339  
Directors –

2000–2002 – Keith Golinski, *Australia*; Dan Kinnard, *California*; Martha Goode, *Central*;  
Dennis Cathcart, *Florida*; William Frazel, *Florida*; Moyna Prince, *Florida*; Stuart  
Strutin, *Northeast*; Bill Soerries, *Southern*, John Atlee, *Western*; Luiz Felipe Carvalho,  
*International*; Peter Waters, *International*.

2001–2003 – Oscar Allen, *California*

2002–2004 – Joyce Brehm, *California*; Ed Doherty, *Texas*; Gary Gallick, *Texas*; Ken Marks,  
*Florida*; Fred Ross, *Louisiana*; Hiroyuki Takizawa, *International*.

### HONORARY TRUSTEES

David H. Benzing, *United States*; Nat DeLeon, *United States*; Olwen Ferris, *Australia*; Grace M.  
Goode, *Australia*; A.B. Graf, *United States*; Roberto A. Kautsky, *Brazil*; Marcel Lecoufle, *France*;  
Elton M. C. Leme, *Brazil*; Elmer J. Lorenz, *United States*; Harry E. Luther, *United States*; Harold  
Martin, *New Zealand*; William Morris, *Australia*; Robert W. Read, *United States*.

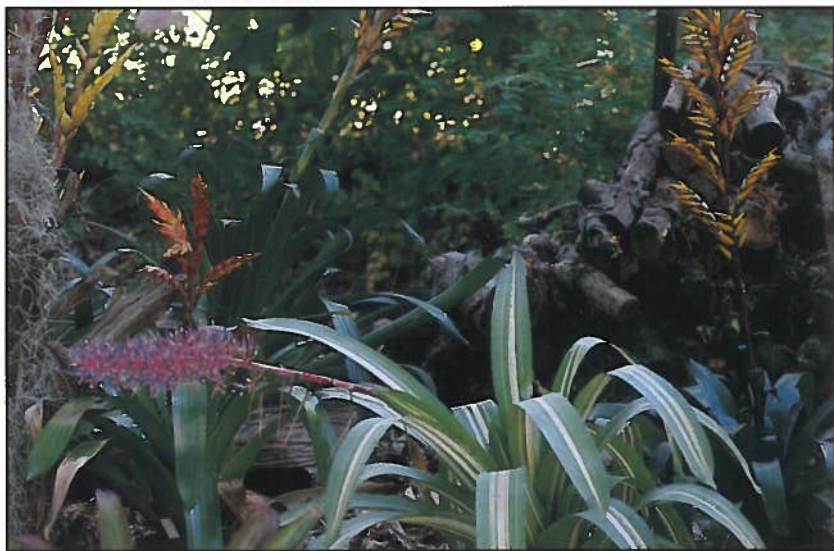
### DIRECTORY OF COMMITTEE CHAIRMEN AND SERVICES

Affiliate Shows: Charlien Rose, 4933 Weeping Willow, Houston, TX 77092.  
Affiliated Societies: Gene Schmidt, 9228 Vinland, Duluth, MN 55810  
Conservation: Rolfe W. Smith, Longwood Gardens, P.O. Box 501, Kennett Square, PA 19348.  
Cultivar Registration: Derek Butcher, 25 Crace Rd., Fulham, SA, Australia.  
Finance & Audit: John Duos, 3415 Kenwood Dr., Orange, TX 77630.  
Judges Certification: Betty Prevatt, 2902 2nd St., Ft. Myers, FL 33916  
Membership and subscriptions to the JOURNAL: Please see inside front cover.  
Mulford B. Foster Bromeliad Identification center: Send specimens and contributions to Harry E.  
Luther, at the Center, The Marie Selby Botanical Gardens, 811 South Palm Ave., Sarasota, FL  
34236. FAX: 941-951-1474.  
Publication Sales: George Allaria, 2265 W. 239th Street, Torrance, CA 90501.  
Research Grant: Gerald Raack, Mosel STR 10, Eckental 90542, Germany.  
Seed Fund: Harvey C. Beltz, 6327 South Inwood Road, Shreveport, LA 71119-7260.  
Slide Library: Christopher Krumrey, 5206 Robinsdale Lane, Austin, TX 78723  
Web Site: Ken Marks, 22690 Lemontree Lane, Boca Raton, FL 33428.



*Aechmea entringeri*,  
a rare species from Brazil.  
See text on page 209.

Chet Blackburn



Chet Blackburn

*Aechmea fendleri* 'Vista', a variegated form of an old favorite.  
See text on page 209.