# Bromeliaceae

VOLUME XXXVI - No. 2 - March / April 2003

# The Bromeliad Society of Queensland Inc.

**P. O. Box 565, Fortitude Valley**
**Queensland, Australia, 4006**


GENERAL MEETINGS are held on the Third Thursday of each month except December, at the Uniting Church Hall, 52 Merthyr Road, New Farm, Brisbane, commencing 8 p.m.
Classes for beginners commence at 7.30 p.m.
FIELD DAYS are held regularly in the gardens of members as advised in the Program
MEMBERSHIP FEES Family $20, Single $15 pa — payable on 1st of January

## OFFICE—BEARERS 2003-2004

| | | |
|---|---|---|
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| HALL STEWARD | Mr. David Brown | |
| LIFE MEMBERS | Mrs. Grace Goode, Mr. Bert Wilson<br>Mr. Peter Paroz, Mrs. Patricia O'Dea<br>Mr. Michael O'Dea | |

# Contents





**COPY DEADLINES** for *Bromeliaceae*

May / June.....April 18, 2002
July / August.....June 16 2002

Please forward all copy to
The Editor, 3 Derribong St., Boondall, Qld, 4034
**Phone 07 3265 1547** **Email pparoz@powerup.com.au**
**Electronic copy in RTF or MS Word 7.0 or earlier- Times New Roman**
Photographs to Doug Upton, 101 Jerrang St. Indooroopilly, Qld, 4068
Phone 07 3378 3511

# Cover Photographs

Front Cover

***Vriesea zamorensis*** This Vriesea has been in my collection for a number of years with each successive plant producing only one off-shoot. All off-sets develop laterally, at the base of the inflorescence, The photograph shows the offset to the left of the plant.

The inflorescence is multi-bracted and firmly erect; the bracts are red and orange/yellow and the flowers pure white.

Under poor light conditions, *Vr. zamorensis* is not the easiest plant to cultivate. However this medium sized plant with its apple green leaves is quite beautiful, and well worth any extra care.

My plant grows in an open bark nugget mixture and responds to regular foliar feeding. Bright light avoiding direct sun-light is essential.

*Growers Doug & Joy Upton* *Photography Doug Upton*

Rear Cover

***Aechmea nallyi*** Even before *Aechmea nallyi* produces its outstanding scape bracts and inflorescence, the form and colour of the funnel shaped rosette is pleasing to the eye.

The broad leaves up to 40 cm in length are flushed with deep purple on the inside, while the outer surface is a weathered green tinged with a brownish haze.

When mature, the plant initially produces upright cone shaped cluster of scape bracts. A day or so later, each of the numerous rose pink bracts, now exceeding the height of the leaves, unfurl to reveal a pyramidal inflorescence.

The compound inflorescence has golden yellow bracts which last for several weeks, The natural habitat is Peru where it grows epiphytically at altitudes above 500 feet,

*Growers Len & Olive Trevor* *Photography Doug Upton*

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You may wish to give some of the bromeliads e.g. *Guzmanias* in your shade house extra shade during the hottest part of the year (typically, mid November to March in Southern coastal Queensland).

One way of achieving this, is to place an extra piece of shade cloth underneath the shade cloth forming the shade house's roof. If necessary, the additional piece of shade cloth can be "pinned" to the roof by using 75mm long galvanised nails. These nails can be removed easily when you wish to take the extra piece of shade cloth away. *Bob Reilly*

# Society Diary

**NEWS REPORTS EVENTS**

MEMBERSHIP FEES Family $20, Single $15 pa

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**Monthly Meetings**

Mar. Plant Workshop Norma Davis/Peter Paroz
Beginner's Class Leader – Bob Reilly Foliage Vrieseas

Apr. Mini Show Class I: *Cryptanthus* species & hybrids
Class 2: *Guzmania* species & hybrids
Class 3: *Dyckia* species & hybrids

***Billbergia* Workshop**

Bring along your *Billbergia* species and hybrids for a panel discussion on the variety and culture of this genus
Beginner's Class Leader– Narelle Aizelwood Difficult offsets

**Field Trips**

**Saturday, 29th March** A Garden Party will be held at the home of Len and Olive Trevor, 232 Canvey Rd., Ferny Grove (phone: (07) 3351 1203). Conducted tours of Bromeliad plant houses, cultural talks and plant sales will be featured. Members are requested to bring a plate for morning tea. Lunch will be provided.

**Saturday, 3rd May** A field day will be held from 9:00 am to 2:00pm in the garden of Keith and Janne Redhead at 6 Parkwood Drive, Capalaba, (phone: (07) 3206 3379). Cultural talks, garden tours, and plant sales will be featured. Members are requested to bring a plate for morning tea and their own lunch if required.

**Competition Results**

January Mini-Show
Novice
Class 4

| | | |
|---|---|---|
| First | *Neoregelia* 'Gunpowder' | Joe Green |
| First | *Tillandsia capitata* 'Yellow' | Viv Duncan |

Intermediate
Class 1

| | | |
|---|---|---|
| First | *Aechmea orlandiana* 'Ensign' | Perry Crawford |
| Second | *Aechmea* (*recurvata x victoriana* v. *discolour*) | Perry Crawford |

| | | |
|---|---|---|
| Class 3 | | |
| First | *Dyckia platyphylla* | Perry Crawford |
| Class 4 | | |
| First | *Neoregelia* 'Skotak Hybrid' | Yves Daniel & Lindsay Gerchow |
| Second | X *Neomea* 'hybrid' | Yves Daniel & Lindsay Gerchow |
| Advanced | | |
| Class 1 | | |
| First | *Aechmea orlandiana* 'Ensign' | Doug & Joy Upton |
| Second | *Aechmea* 'Friederike' variegata | Doug & Joy Upton |
| Class 4 | | |
| First | *Tillandsia xerographica* | Dorothy Cutcliffe |
| Second | *Deuterocohnia brevi folia* | Dorothy Cutcliffe |

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February Popular Vote

| | | |
|---|---|---|
| Intermediate | | |
| First | *Tillandsia rothii* | Patricia O'Dea |
| Second | *Tillandsia* (*rothii* x *xerographica*) | Patricia O'Dea |
| Second | *Neoregelia pendula* var. *brevi folia* | Keith Dawson |
| Advanced | | |
| First | *Tillandsia fasciculata* 'magnifica' | Doug & Joy Upton |
| Second | *Billbergia* ('Muriel Waterman' x *euphemiae*) | Bob & Mavis Paulsen |

## Home Page

The Society's Web Page is now on line and can be accessed at the URL WWW.BSQ.ORG.AU

Rainwater is usually better for bromeliads than most town water supplies. This is because the level of dissolved salts in rainwater is usually much lower. (Also rainwater isn't alkaline, which can be a problem with some town water supplies). So, if you have a rainwater tank, consider using rainwater on your bromeliads. *Bob Reilly*

If you are close to, or down wind of an industrial area, have your rain water checked for 'acid rain'. Some years ago, I checked out a tank water sample from a country estate on the southern end of the Darling Downs. The sample was sufficiently acid to dissolve the verdigris from the copper plumbing !! And would have been toxic to a wide range of plant life especially bromeliads. Any large coal or oil burning furnace or boiler is a possible suspect. *Ed*

# *The Editors Desk*



**Copy Deadlines**:- General Meeting of the month preceding the month of issue.

## *Aechmea nudicaulis*

As part of the program for the January 2003 meeting, members were asked to table examples of *Aechmea nudicaulis*, so that everyone could see the wide variety of shapes and types in this species. About 30 different forms (clones) were on display.

The name "nudicaulis" means naked-stem. It refers to the scale-shaped, and often absent altogether, flower bracts on the plant's inflorescence.

The plant occurs naturally throughout much of Mexico, Central America, West Indies, Venezuela, and Brazil. It grows both as an epiphyte, and as a terrestrial.

*Ae nudicaulis* is very variable in size and leaf colouration. Typically, a few leaves form a compact, tubular-shaped rosette, which varies from 15 to 70 cm in height. The leaves can be green, red or brown (or some combination of these) in colour and may have grey/silver banding. Many variegated clones exist. The plant's inflorescence is typically a simple (that is, not branched) cylindrical, 5 to 25 cm long, spike of flowers.

The plant is easy to flower and grow either as an epiphyte tied to a tree or as a terrestrial in a pot. It grows easily in the garden, but it is probably preferable to avoid placing plants where they receive full afternoon sun in summer. Surprisingly, certain variegated clones are sometimes more sun-hardy than the non-variegated clones. (The reverse is normally the case for most bromeliads.)

Points made about *Ae nudicaulis* at the January 2003 meeting included:- This species has seven botanically recognised varieties and forms. There are many more named cultivars, only some of which have been registered. In addition, there many unnamed clones. One United States' collector was reputed to have had over 300 clones.

They make excellent landscaping subjects as, while they readily grow in

hollow logs and on stumps, their erect growth habit and sun-hardiness gives them an "edge" over many other bromeliads in such situations.

An attractive bromeliad tree can be "constructed" using only some of the different clones of this species for plant material. (Details on how to construct a bromeliad tree are given on pp 16-18 in the November-December 2002 edition of *Bromeliaceae*.)

Most clones of this plant have an indentation like a "thumb mark" towards the base of each leaf. As few other bromeliads have this feature, its presence can mean the plant you are looking at is *Ae nudicaulis*. Many hybrids having this species as a parent also display this characteristic.

Thanks are due to Mike Symmons for leading the discussion on the night, and to those members who brought plants along. *Bob Reilly*

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What may be an ideal location for a particular plant at one time of the year e.g. winter, may not be the best spot at another time e.g. summer. Environmental factors which often vary are the: amount of light, "coolness" of the spot relative to other areas of the garden, and the amount/strength of wind experienced.

Be prepared to move your plants around during the year to obtain the best from them. *Bob Reilly*

# *Presidents Report for 2002*

The Society has completed another successful and eventful year and is well placed to progress into 2003. The support and the efforts of many of our members have made this possible. This report will detail some of the activities of 2002.

**Shows & Displays**

A number of shows, displays and plant sales days were conducted during the year. Included in these were:-

The 25th annual Combined Show at Mt. Coottha in partnership with the CSSQ Inc.,

RNA annual display, at the Exhibition Grounds,

Tropical Foliage Festival at Mt. Cotton,

Pine Rivers Special School Expo,

Royal Horticultural Society Garden Spectacular at Mt. Coottha.

These activities have given us valuable contact with the public, enabling us to advertise the Society. They also provide us with interaction with other horticultural societies and they provide valuable income. Two of these activities deserve special mention. Firstly the Combined Show was again very successful with great support from the public in attendance and plant sales. The Competition tables, however, weren't well supported and this part of the show needs to be lifted. The overall success of the show was due to the work of the members of the Combined Show committee and the Show Stewards.

Secondly, our display at the RNA was our most successful ever with awards for the "Best Specialist Society Display" and the Mrs Burnett Shield for the "Best Display in the Pavilion" being awarded to our Society. Bob Cross the Show Organiser and his band of helpers are to be congratulated for these achievements.

**Study Group**

Members of the study group continued to meet monthly and exchange views and information during the year. This activity has provided good fellowship and a valuable exchange of ideas between members. The group is open to all members and continues to have a dedicated following.

**Field Days and Bus trips**

Field days were held at the collections of Len and Olive Trevor, Linda and Graham Purcival, Arnold and Phyllis James, and Mike Symmons. All were well supported and enjoyed by members and visitors alike. Mike volunteered his collection on short notice when the trip to Cheryl Basic's collection had to be postponed. Our thanks go to all of these members who

opened their collections for these visits, and to the Field Day Organiser, Nancy Kickbusch and her stewards who worked to make these activities popular and successful.

**Bromeliads XIII Conference**

The Conference Committee was formed during the year and planning is now under way for the Conference in 2005. Ideas were canvassed from members via questionnaires and these have provided a variety of ideas and options. Selection of a venue, development of the programme, selection of local and overseas speakers, fund raising programmes are well progressed to the present.

**Meeting programmes**

One of the important roles of any committee in any year is the planning and implementation of the meeting programmes. This has certainly been the case in the past year and will continue to be so in the future. Maintaining the quality and variety of presentations has been challenging and the input of committee and members has been valuable. The injection of new ideas that comes from our members, new and old, is central to getting the best results.

***'Bromeliaceae'***

Some problems were encountered with the quality of reproduction of our journal during the year and we were forced to return to UltraPrint for the publication. Upgrades in the colour content proposed by Bob Reilly were introduced for a trial period of 12 months. Present indications are that these upgrades will be continued beyond this period. The availability of articles is always a problem and this past year has been no exception. The editor, Peter Paroz has maintained the standard under difficult circumstances and with the support of a few regular contributors. In particular the valuable contributions by Bob Reilly should be noted.

**Computer**

Following submissions made by the previous committee, the Govt. Gaming Fund awarded a cash grant to the Society and this was put towards the cost of a new computer and related equipment. The computer is now in use by the Editor.

**Fire Ants**

The importance of fire ant control and eradication is of utmost importance to our members. Programmes were conducted by DPI representatives at two of our monthly meetings. The Society Management plan for Shows and Displays is currently being developed by the DPI.

**Insurance**

As expected, our insurance premiums were increased but the rates offered by our current insurer were still competitive; so we were able to remain with

the present insurer for another year. Changes in the insurance industry, however, require constant vigilance to maintain the best available deal.

**Web site**

Development of the Society website has been largely completed. There will be a need to fine tune and maintain the site but it will establish our Society identity on the internet and will provide a notice board for society activities. Of particular value will be the information page for the Conference. Keith Dawson was responsible for all of the work to design, compile, and post the site and I am sure all members join me in appreciation of this work. The permanent site will be located at: **www.bsq.org.au**

**Tillandsia Workshop**

This seminar, held on 12th October, was developed and organized by Bob Reilly. Ten members attended and a good variety of topics were discussed. Attending members have expressed the desire for other workshops to be held in the future.

**Life Memberships**

Michael and Patricia O'Dea were appointed to life membership in recognition of their service to the Society. With their appointment, and in accordance with the limits of membership numbers, all vacancies for life members have been filled for the present.

**Beginners Classes**

These classes were continued during the year with a number of volunteers leading the discussions. The classes were again popular and were attended by a number of the new members. These classes provide valuable opportunities for new members to have interaction with some of the more experienced growers.

**Bereavement**

Sadly, the Society lost one of its very talented and enthusiastic members with the passing of Don Hobbs.

**Stewards & Volunteers**

In conclusion I would again like to express my appreciation for the work done by our committee members, stewards, and other volunteers. There is not time to detail all the individual effort involved in making the Society function and achieve its objectives. These members have given up their time to benefit of us all, many serving in multiple roles and on multiple sub-committees. To all of these members I express my appreciation.

*John Higgins, President. February, 2003*

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# VEGETATIVE PROPAGATION of BROMELIADS

The production of seed, known as sexual reproduction, is one of two mechanisms bromeliads use to reproduce themselves. The other mechanism is asexual reproduction or vegetative propagation.

The most common type of vegetative propagation is the formation of offsets at the base of the plant, either at the time of flowering or shortly afterwards. Typically, the plant will produce around three offsets which, if they are removed when they are about one third to one half of the mother plant's size, will often be followed by another "batch" of offsets. Many of the cultivated bromeliads use this reproduction strategy. The offsets can usually be removed with a sharp knife.

A variation to this approach occurs when the offsets are produced on the plant's stem. Usually only one (sometimes two) offsets are produced initially. Removing it without destroying the mother plant requires a fair degree of skill and care. If the offset is removed successfully, another batch of one or two offsets may be produced. Examples of plant with this strategy are: *Guzmania sanguinea* and *Vriesea elata, Vr. splendens* and *Vr. zamorensis.*

An interesting modification of this strategy occurs with Cryptanthus plants. In their case, offsets form on the upper part of the plant's stem and, if left undisturbed, may detach themselves. Usually though, they are detached by the grower when they are about one third of the parent plant's size, by gently moving the offset from side-to-side, and outwards.

Offsets produced at the base of, or along, a plant's stem, are usually located quite close to it. However, in some cases, offsets form at the end of stolons. While the stolon is normally relatively short, that is, less than 20 cm, in other cases it exceeds 50 cm in length. Examples of plants with stolons are: many aechmeas, some Tillandsias (for example *disticha*) and Vrieseas (for example *vagans*), and *Cryptanthus pseudoscaposus* (which has a stolon exceeding 50 cm).

In all cases, offsets can be removed with about 2 cm of the stolon attached, and then potted. Secateurs are useful for cutting thin stolons, while small pruning saws can be used on thick (1 cm plus) ones. The remaining part of the stolon can be removed from the plant (so as to improve its appearance), as the stolon will not produce any more offsets.

Some bromeliads produce "adventitious" offsets. They usually appear well before the plant is mature. These offsets appear like grass seedlings at first, and there may be one, or several, of them. It is best to leave them on the plant until they are 7 to 10 cm tall. Examples of plants which produce offsets this way are: many alcantareas, *Vriesea glutinosa,* and certain tillandsias

*Tillandsia grandis* Adventitious Offsets

*Alcantarea* sp. Adventitious Offsets

*Neoregelia concentrica* hyb.

*Tillansia latifolia* Viviparous offset

*Aechmea* 'Bert'

*Aechmea correia-araujoi*

*Aechmea serrata* X *Ananas comosus*

such as *edithae, grandis, rauhii* and *viridiflora.*

If you wish to acquire a plant which reproduces through adventitious offsets, then it is best to obtain an immature plant. Otherwise, your plant may have lost its ability to produce adventitious offsets and thus reproduce itself (other than through seed).

Other bromeliads produce offsets on their inflorescence. Offsets may form along the inflorescence, at its end, or in both locations. Plants with this type of offsetting strategy are usually described as "viviparous". Examples of such plants are: the common pineapple *(Ananas comosus)* and *T. flexuosa, latifolia, lymanii, secunda* and *sommians.* These offsets can usually be removed (with the use of secateurs) when they are about 10 cm tall or one third the height of the parent plant (whichever is the smaller size).

Some bromeliads produce shoots arising from underground rhizomes. Many pitcairnia species use this strategy. Remove the shoots when they are one third to one half of the parent plant's size. While a shovel can be used when dividing larger plants, a knife is better for smaller growing ones. Other pitcairnias form bulbous-like growths which can be broken apart to provide new plants.

Some bromeliads do not produce any offsets. They are known as "monocarpic". Examples are: *T .eizii, prodigosa,* and *Puya raimondii.* Such plants rely solely on seed to reproduce themselves.

Three final points are worth making:-

(a) Some bromeliads routinely produce offsets through several of the mechanisms described above. For example, *T. somnians* produces offsets at each plant's base, and along (as well as at the end of) its inflorescence.

(b) Some "populations" (that is, a group of plants of the one species growing in one location) may display particular reproductive strategies which are not shared with other populations of that species. For example, some populations of *T. latifolia* are viviparous while others are not.
Importantly, from a grower's perspective, some populations of a species which is normally monocarpic, may produce offsets. Examples are: *T. complanata,* and *utriculata.* If you wish to buy plants of such species, it is important to ensure you are obtaining one which can reproduce vegetatively.

(c) Some bromeliads will normally use only one reproductive strategy, but can vary that approach if it appears unlikely to succeed. For example, Benzing (1980) p138 states:

*"....Resource availability plays a major role in monocarpy, as is illustrated by an occasional T. dasylirifolia specimen. In parts of its range in Mexico, this large epiphyte does produce occasional and often weakly growing*

*offshoots, but only when fruit set is poor....This kind of behavior suggests that the seed crop is favored when resources are allocated during the growth process. Asexual activity is held in abeyance as a fail-safe option in case the sink (young [seed] capsules) is too small to store enough of the available nutrients...."*

One implication of Benzing's comments is that the removal of young (immature) inflorescences may stimulate the production of offsets, as seed production is no longer an option for the parent plant. I don't know whether this strategy has been tried. *Bob Reilly*

*REFERENCES*

Benzing, D.H. (1980) The Biology of the Bromeliads, Mad River Press, Eureka, CA.

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# FIRE ANT UPDATE

The Bromeliad Society of Queensland now has an ARPM (Approved Risk Management Plan ), No. 2376.

Effective immediately, the following conditions apply:-

- Any member who resides in a restricted area must provide the Fire Ant Coordinator, Norma Davis, with an official Movement Certificate nominating their DPI Site Inspection No.
- Plants will not be **permitted to be sold or used for display** at any official Bromeliad Society activity, or any activity where the Society is required to provide it's ARMP No. if a member from a restricted area fails to provide the appropriate DPI Movement Certification.
- Each time you **sell plants or use them in a Society sanctioned event**, you **must** provide a Movement Certificate to the Fire Ant Co-ordinator or a nominated person.

If you live in a Fire Ant Restricted zone and you have not received written communication from the Fire Ant Coordinator, please make contact as a matter of urgency.

Members with a P.O. Box # address are urgently requested to notify the Fire Ant Co-ordinator of their residential (nursery) address.

*Norma Davis* 3271 1326 normadavis@optusnet.com.au

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These restrictions and conditions are Queensland government requirements to assist in the control and eradication of Fire Ants and are **not negotiable.** *Ed*

# Summer Berries---Three Aechmeas.

***Aechmea capixabae,*** although first discovered in 1939, was confused for 50 years with *Ae. victoriana,* which is distinctly different and later with *"Ae. fulgens var. kautskyana"*, an invalid name. Native to the Capixaba Mountains, Brazilian State of Espirito Santo, this medium-sized ornamental has become available and popular only in the past decade.

The bowl-shaped rosette, 50-60cm. across, has broad lustrous green almost spineless leaves with pointed tips. My clone has golden yellow ovaries topped by purple petals on the erect or leaning inflorescence to 30 cm. tall, which is a sub-dense pyramidal panicle. Other variants display coral red or amber orange ovaries, which may be different clones and /or the ageing berries changing colour. The foliage may vary also by being brown-spotted towards the leaf sheaths.

***Aechmea* 'Compacta variegated'** is German breeder Walter Richter's 1956 hybrid of *Ae .fulgens var. discolor* x 'Maginali'. The funnelform rosette to 50 cm. diameter, has semi-glossy variable green/cream striations or medio-picta variegation, the leaf reverses showing pronounced scurfing. The erect branched spike 40cm. high flaunts scarlet red ovaries and cornflower blue petals. This choice variegate appears to be still rather rare in collections, probably even more so than the green/ maroon discolor foliage form from which it sported.

***Aechmea carvalhoi*** is a Brazilian rainforest epiphyte from near Itamaraju, Bahia State. Discovered by the botanist Andre M. de Carvalho in 1984, after whom it is named, this gem is more a collector's item. With stout stolons to 15 cm long, the soft green flaring rosette to 35 cm. across develops bronze leaf margins in bright diffused shade. The upright spike, basally-branched, has scarlet stems and pinkish-red scape bracts hanging beneath a simple cluster of grooved green ovaries and lavender petals edged white, the spent flowers turning red.

This soft-leaved trio prefer constant moisture, high humidity, moderate to light shade and warmth, together with winter protection as they are marginally cold-sensitive. As late Spring/ early Summer bloomers, their colourful berries last several months well into Autumn and early Winter.

*Geoff Lawn.*

References

L.B. Smith, Arq.Bot.S.Paulo 11.1:56pl.72.1941 (re *Aechmea capixabae*)
H .Luther, Misnamed Bromeliads 16: *Aechmea capixabae*, J. Brom. Soc.46 (3):122-3. 1996
D .Beadle. BSI Bromeliad Cultivar Registry 1998, p.9 (re *Aechmea* 'Compacta variegated' )
Pereira & Leme, Bradea 4:267-8,274. 1986 (re *Aechmea carvalhoi* )
E. Leme, Report 2: J.Brom.Society 39 (1) 17.1989 (re *Aechmea carvalhoi* )
Website Photo Index: http://fcbs.org/

# Another World--the Diverse Bigenerics.

Bromeliad bigenerics are virtually unknown in the wild because fertility barriers, different blooming times and geographical range prevent most species in different genera from cross-breeding by specialised pollinators. Even in large cultivated mixed collections where breeders can try many combinations, there are no readily-available records on the success/failure ratio of attempts, probably because hybridists work mainly in isolation and we tend to hear only of the progeny which survived and were not culled.

Certainly pollen storage assists with otherwise non-simultaneous flowering parents but the biggest obstacle to success appears to be still genetically-incompatible "partners"--the potential parents' genes simply don't mix, at least not with current plant-breeding technology.

To date, the Bromeliad Cultivar Registry lists 279 different bigenerics within 38 genera. To be expected, every bigeneric has been produced from 2 genera within 1 sub-family, never Bromelioideae crossed with Tillandsioideae or Pitcairnioideae (or combination thereof)--their biological differences are just too great and cause rejection. It is often quoted that all bigenerics turn out sterile ("mules"), which may be true in most cases as there are no intergenerics (the next generation) involving 3 or more different genera as yet registered. Noted however are Canistrum x Aechmea x Canistrum (e.g. X **Canmea 'Tropic Beauty'**) and Cryptanthus x Billbergia x Cryptanthus (e.g. X **Cryptbergia 'Goodale'**), for instance.

So far, the majority of bigenerics have been primary crosses (i.e. species x species) and those parents which are least alike tend to produce the most distinctive offspring. Dominant and recessive characteristics play a role in individual crossings, with some progeny intermediate between both parents, while other hybrids appear more like their seed parent OR pollen parent, at least at species level. The genetics are more complex with hybrid x hybrid or hybrid x species pairings, producing a mixed range of siblings even from the same seed batch. Bigeneric genera names have "X" inserted before each genus to distinguish them from standard, botanically-described genera names.

The following wide selection may have individual appeal--beautiful, bizarre, curious etc., but when studied closely they are altogether in different combinations to the standard, familiar botanical 57 genera:

x ***Aechopsis*** **'Newk'.** Bill Morris's *Aechmea miniata var. discolor* x *Canistropsis burchellii.* Resembles the *burchellii* parent, but a larger, stiffer-leaved mossy-green lax rosette with pale, bluish-petalled raised cone. The mature inflorescence turns amber orange; Shade-loving and vigorous.

**X *Anagelia* 'Toy Boy'.** John Catlan's *Ananas comosus* (?) x *Neoregelia* 'Mother'. Variegated, medium-sized green/cream-striped rosette flushed pink in strong light. Raised orange-red cone.

**X *Anamea* 'Raspberry Ice'.** Chester Skotak's *Aechmea serrata* x *Ananas comosus var. variegatus.* Large to 1 metre tall and as wide. Bright green 6cms. wide arching lanceolate leaves, white-margined and spiny. The bulky upright inflorescence has densely-branched lolly pink bracts and violet petals. New plantlets form on each raceme tip as well as by regular offsetting. Spectacular.

**X *Canmea* 'Galaxy marginated'.** Sport off a tissue-cultured select form of **X *Canmea* 'Smokey',** Nat DeLeon's *Canistrum fosterianum* x *Aechmea chantinii.* White-edged , grey-green tubular flared rosette mottled brown with purple leaf tips. The coral orange, star-like spike has white flowers. Woody stolons.

**X *Cryptbergia* 'Topaz'.** Vic Przetocki's *Cryptanthus marginatus* x *Billbergia pyramidalis var. concolor.* Resembles a large, broader *marginatus* with pinkish-tan striped recurving leaves and grey-scurfed reverse. The *pyramidalis* parent shows in the short red-bracted spike with blue petals.

**X *Dyckcohnia* 'Conrad Morton'.** Paul Hutchinson's *Dyckia macedoi* x *Deuterocohnia meziana* produced a large silvery-grey to reddish spiny rosette to 80cms. diameter. The huge 1.5 metre tall spike has pendulous branches with gold tubular flowers. The inflorescence is perennial and forms new branches at each bloom period. Tough and xerophytic for full sun.

**X *Guzvriesea* 'Patricia'.** Guzmania x Vriesea cross of unreleased parentage, hybridist unrecorded. Large, majestic plain green rosette to 90cm tall with magnificent branched spire of fat carmine pink scape bracts. Breathtaking.

**X *Guzvriesea* 'Star Fire'.** John Buchanan's *Guzmania lingulata* x *Vriesea ensiformis.* Plain green soft rosette cradles the blood-red, tightly-branched, star-like flower cluster. Stunning.

**X *Hohenelia* 'Nifty Nev'.** John Catlan's *Hohenbergia disjuncta* x *Quesnelia edmundoi var. edmundoi.* Nestled in the funnel-form flaring tube speckled and blotched purple is the yellow branched raceme with white petals.

**X *Neobergia* 'Noddy'.** Bill Morris's *Neoregelia carolinae* x *Billbergia nutans.* Grassy green upright flaring tube displays a short, curved red-bracted spike of purple petals. Some scarlet leaf bracts.

**X *Neomea* 'Buchanan's Nebula'.** John Buchanan's *Neoregelia carolinae* x *Aechmea biflora* exhibits a coloured heart, unlike most *Neomeas.* Striking, scarlet star-like scape bracts with purple petals and reddish leaf bracts. Other

sibling clones are **'Solar Flare'** and **Mars Rising'.**

X *Neophytum* **'Galactic Warrior'.** Named by Jimmy Antle. Cream or pink-marginated sport off x *Neophytum* **'Ralph Davis'**, Nat DeLeon's *Neorerelia* 'Meyendorffii' x *Orthophytum navioides.* In bloom, a flat, spreading thin-leaved rosette, green pin-cushion centre blushed red , pink-flushed all over in bright light. Variegation usually stable; very popular.

X *Neophytum* **'Lisanne Kiehl'.** Michael Kiehl's *Neoregelia* 'Blushing Bride' x *Orthophytum navioides.* Bronze red spoke-like leaves form flat rosette to 90cms. across. Carmine red centre.

X *Neotanthus* **'Warren Loose'.** Sandy Antle's *Neoregelia carolinae* x *Cryptanthus acaulis* 'Variegata'. Pinkish red centre with finely-striated red leaf bracts and foliage.

X *Niduregelia* **'Pipe Dream'.** Unknown parentage but a high-class variegate by John Catlan. Strongly striated cream/green rosette flushed pink with a blood red centre.

X *Orthomea* **'Pure Delight'.** Ken Shaw's *Orthophytum saxicola* x *Aechmea* 'Mary Brett'. Like a smaller 'Mary Brett' but with russet-red inner leaves and a short cluster enclosing gold petals.

X *Pucohnia* **'George Anderson'.** *Puya laxa* x *Deuterocohnia schreiteri* by G. Anderson. Large, tough xerophyte, grey-green spiny open rosette. Tall branched spike to 1 metre of lateral-spreading branches, orange petals. The inflorescence keeps growing during blooming.

X *Quesmea* **'Lymanii'.** Mulford Foster's *Quesnelia testudo* x *Aechmea distichantha var. schlumbergeri.* This big plain green rosette holds a tall spike of rose-pink, crepe-like bracts with violet petals. Tough bold specimen for landscaping.

X *Vriecantarea* **'Inferno'.** John Arden's *Vriesea ensiformis* x *Alcantarea regina.* Like a very red *regina*, up to 2 metres tall x 1 metre wide. Plain green foliage but crimson, sword-shaped branched spike with yellow flowers. Spectacular.

X *Vrieslandsia* **'Swamp Fire'.** John Arden's *Vriesea inflata* x *Tillandsia multicaulis.* Multi-branched, orange-bracted "paddles" emerge from the soft green rosette's leaf axils. The central stem extends higher. Eye-catching.

X *Vrieslandsia* **'Blazing Tropics'.** John Arden's *Vriesea* ( 'Riviera Flirt' x 'Maroon Delight') x *Tillandsia multicaulis.* Scarlet-bracted, branched "paddles" top the green rosette. Striking.

"A picture says a thousand words" so if possible see all the above hybrids and lots more on the website: http://fcbs.org/ under the Photo Index, Bigenerics section. Although several bigenerics date back to the 1880s, relatively few bigenerics were bred before about 1960. In fact, certain

combinations were thought impossible to create, but bromeliad hybridising overall has escalated in the 42 years since and bigenerics have proliferated accordingly, despite the gene-mixing difficulties by artificial cross-pollination.

On the competitive showbench bigenerics still are placed mostly in classes worded "Any Other Genus". As their numbers and popularity increase, their own class or even a single bigeneric genus class may be warranted. After all, currently the largest bigeneric genera with sizeable cultivar numbers are: X *Neomea* (59), X *Neotanthus* (49) and X *Niduregelia* (33).

Other genera worth looking at, their present cultivar totals and examples are:

X ***Anamea*** ( *Ananas* x *Aechmea* )= 5 e.g. x A. 'Pink Scorpion'
X ***Androlaechmea*** (*Androlepis* x *Aechmea*) = 2 e.g. x A. 'Sampson'
X ***Billmea*** (*Billbergia* x *Aechmea* )= 6 e.g. x B. 'Red October'
X ***Billnelia*** ( *Billbergia* x *Quesnelia* ) = 4 e.g. x B. 'Sebastian Laruelle'
X ***Canegelia*** ( *Canistrum* x *Neoregelia* ) = 2 e.g. x C. 'Roman Fountain'
X ***Cryptananas*** ( *Cryptanthus* x *Ananas*) = 1 i.e. x C. 'Pink Utopia'
X ***Cryptmea*** ( *Cryptanthus* x *Aechmea* ) = 1 i.e. x C. 'Dazzler'
X ***Deuterocairnia*** (*Deuterocohnia* x *Pitcairnia*) = 1 i.e. x D. 'Lenny'
X ***Neobergiopsis*** ( *Neoregelia* x *Hohenbergiopsis* ) = 1 i.e. x N. 'Pinegrove'
X ***Neorockia*** ( *Neoregelia* x *Wittrockia* ) = 1 i.e. x N. 'Midhurst'
X ***Neostropsis*** ( *Neoregelia* x *Canistropsis*) = 1 i.e. x N. 'Fanfare'
X ***Nidbergia*** ( *Nidularium* x *Billbergia* ) = 1 i.e. x N. 'Chas Hodgson'
X ***Nidumea*** ( *Nidularium* x *Aechmea* ) = 9 e.g. x N. 'Midnight'
X ***Ortholarium*** ( *Orthophytum* x *Nidularium* ) = 2 e.g. x O. 'Hades'
X ***Orthomea*** ( *Orthophytum* x *Aechmea* ) = 2 e.g. x O. 'Powderpuff'
X ***Orthotanthus*** ( *Orthophytum* x *Cryptanthus* ) = 1 i.e. x O. 'Little Bits'
X ***Portemea*** (*Portea* x *Aechmea* ) = 5 e.g. x P. 'Hilda Ariza'
X ***Pseudanamea*** ( *Pseudoananas* x *Aechmea* ) = 1 i.e. x P. 'Prima Ballerina'
X ***Puckia*** ( *Puya* x *Dyckia*) = 1 i.e. x P. 'Sparkle'
X ***Quesistrum*** ( *Quesnelia* x *Canistrum* ) = 1 i.e. x Q. 'Claudia'
X ***Quesregelia*** ( *Quesnelia* x *Neoregelia*) = 1 i.e. x Q. 'Pioneer'
X ***Vrierauhia*** ( *Vriesea* x *Werauhia* ) = 2 e.g. x V. 'David Fuertes'

We have both gained and lost bigeneric genera through botanical reclassification of their parent genera or individual species within. For example, X *Pitinia* ( *Pitcairnia* x *Pepinia* ) no longer exists because most botanists agreed that all *Pepinia* species be transferred back to *Pitcairnia*.

X *Nidumea* 'Beacon' became X *Aechopsis* 'Beacon' when one of its parents, *Nidularium burchellii,* became *Canistropsis burchellii.* Some coined bigeneric genera names (alternate first and last syllable of both genera names combined) have had to be standardised because , for example, the combination *Nidularium* x *Neoregelia* (now X *Niduregelia* ) used to be called X *Neolarium* also.

Whatever their names, man-made bigenerics do present an unearthly appearance compared to the "normal, natural" world, albeit fertile wild species multiplying true to type but with limited hybridising on occasions within certain boundaries. The field of potential combinations of bigenerics is still wide open but will the hybridists proceed on the basis of "Quality above Quantity"---that is the question. *Geoff Lawn*

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Some time ago, I received a couple of B & W photos from Kevin Walters in Toowoomba.

. One of the photos from Kevin shows a clump of *Tillandsia crispa* from the Oricule region of Ecuador and growing at 2400 feet. This is a small growing slightly pseudobulbous plant.

Locally this is a difficult species to grow. Many years ago, I imported a plant from Ecuador. Unfortunately, its release from quarantine coincided with the hot humid weather and I lost the plant. Barry Gen reports having seen an excellent specimen growing in a collection on the Atherton tableland at an altitude of about 1200 metre. Apparently, not a species for the hot humid coastal areas. My experience with *Tillandsia stadleyii* is almost identical

***Tillandsia zebrina ?***

Another photo from Kevin shows a medium sized, erect, slightly open tubular plant with dark banding. The plant obviously belongs in *Tillandsioideae* as the photo shows a large erect mature inflorescence with burst capsules and plumose seeds. I could not find a listing in the 'Bromeliad Binomials'. Any suggestions ? *Ed.*

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It is often recommended to water bromeliads about once a week during winter. However, if the humidity is less than 40%, or strong dry winds e.g. westerlies are experienced, more frequent watering is desirable.

One approach is to give a thorough watering once a week, and an additional one or two waterings which are sufficient to thoroughly dampen each plant's foliage. *Bob Reilly*

## *Trading Post*

Members, especially country members are invited to list their hard-to-find items in the Wanted List. If any of the items are of interest, contact the member listed. Please contact the editor regarding changes to the list. Entries may be deleted after two issues. Key: P Plant, O Offset, B Book, M Magazine, Sl seedling, Date when plants or seed are available.

| Member | Wanted | | Phone |
|---|---|---|---|
| Michael Pascall | *Aechmea gigantea* | P S | 07 4098 8253 |
| Dorothy Cutcliffe | *Neoregelia carcharadon* (reddish) | P | 07 3386 0505 |
| Keith Pohlman | *Neoregelia* 'Absolutely Fabulous' | P | 07 4151 5395 |
| Keith Dawson | *Vriesea zamorensis* | P O | 07 3285 6710 |
| Keith Pohlman | *Neoregelia* 'Bailey' | O | 07 4151 5395 |
| Doug Upton | *Aechmea retusa* | P | 07 3378 3511 |
| Bob Reilly | BSI Journal 1995-2002 (Any Issue) | M | 07 3870 8029 |
| Carmel Cullen | *Neoregelia* Skotak 'McWilliamsii' hyb | PO | 07 3201 6524 |
| Carmel Cullen | *Neoregelia* 'Plum' | P | 07 3201 6524 |
| Carmel Cullen | *Neoregelia* ' Luv' | P | 07 3201 6524 |
| Carmel Cullen | *Neoregelia* 'Tom Mentelos' | OP | 07 3201 6524 |

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