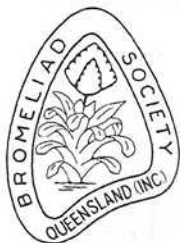


Bromeliaceae



VOLUME XXXVIII - No. 3 - May/June 2004



The Bromeliad Society of Queensland Inc.

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

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Contents

Society Officials	Page 1
Contents	Page 2
Cover Photographs	Page 3
Society Diary	Page 4-5
The Presidents Page	Page 6-7
GRACE GOODE O.A.M. at our April Meeting.	Page 7
Editors Desk	Page 8
Study group Report	Page 9
Vale Olwen Ferris	Page 10
The African Bromeliad	Page 11
Foliage Vriesas	Page 12-17
Plant Breeder's Rights and Patents	Page 18-20
<i>Bromeliaceae of Ecuador</i> -Book Review	Page 21
Those Early Days Part 2	Page 22-25

Advertisers

M. J. Paterson	Page 26
Pinegrove Bromeliads	Page 26
Raemur Plant Farm	Page 26
Brisbane Bromeliad Centre	Page 27
Forest Drive Nursery	Page 27
The Olive Branch	Page 27
Bromagic	Page 28
BROM--MAD	Page 28
Peters Glen	Page 28

The Bromeliad Society of Queensland Inc.

Society Badges

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Phone 07 3265 1547

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Photographs to Doug Upton, 101 Jerrang St., Indooroopilly, Qld, 4068

Phone 07 3378 3511

Cover Photos

Front Cover

Ochagavia carnea

This species belongs to the subfamily *Bromelioideae*. In habitat the plant grows in central Chile, near the coast, at altitudes from 50 to 1080 metres. This species is not widely grown in SE Queensland, being more popular in the southern states than locally. I obtained this plant while attending the Easter 2002 Cactus and Succulent Get-to-Gether in Ballarat, Victoria, from a local grower.

Since that time I have grown the plant in a pot placed under the eaves of the house and facing north. During summer it has protection from the direct mid-day sun but receives early morning and late afternoon sun. From early autumn to late spring it receives full sun all day. In mid November 2003, the centre of the plant showed signs that flowering was underway. By early December 2003, the inflorescence was fully developed with pale rose coloured petals emerging from bright rose outer bracts. Since that time a single offset has developed high up in the rosette.

Photography Doug Upton Grower John Higgins

Rear Cover

Tillandsia compressa

This plant was first purchased as a small inconspicuous offset at the Illawarra conference in 2001. The name tag read *Tillandsia compressa* (the true species). While bromeliad books list this plant as a small species, the plant photographed is not small and could be mistaken for the larger *Tillandsia fasciculata*.

The short 10cm central stem holds eight very plump 9cm long. As the inflorescence ages, the yellow-green bracts change colour, fading to a pale copper-orange. Deep purple petals with pollen laden anthers complete this attractive tillandsia. The habitat of *T. compressa* is epiphytic, Mexico to Columbia at altitudes of 200 - 2000 metres. In cultivation, potted culture is recommended.

Photography Doug Upton Growers Doug & Joy Upton

When to Start Fertilising Seedlings

I have been experimenting with fertilising seeds at the time of sowing !! The seeds in question were *Tillandsia tectorum*. The seeds were sown on to a bundle of fine melaleuca twigs; my version of Dr. Oeser's bundle of thuga twigs. The bundle was then soaked in a bucket of very weak fertilizer for half an hour; and repeated at weekly intervals. The tiny two leaf plantlets were just visible after two weeks. ??

Peter Paroz

Society Diary

NEWS

REPORTS

EVENTS

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.

MEMBERSHIP FEES Family \$20, Single \$15 pa

The BSQ Web Page can be accessed at the www.bsq.org.au

Competition Results

March Popular Vote

Novice

First *Guzmania* 'Amarantha'

Barbara Pugh

Second *Vriesea* (*flammea* x *Dwethersweg*)

Viv Duncan

Advanced

First *Guzmania sanguinea* v *brevipedicalata*

John Higgins

April Mini Show

Novice

Class 1 First *Cryptanthus* "Bits of Silver"

Mark Southam

Class 4 First *Neoregelia concentrica* albomarginata

Jay & Carol Jacobs

Intermediate

Class 4 First *Tillandsia* "Widgee"

Bob Reilly

Second *Tillandsia ionantha* 'Fuego'

Bob Reilly

Advanced

Class 2 First *Guzmania* 'Delores'

Olive Trevor

Second *Guzmania* 'Apache'

Olive Trevor

Class 4 First *Aechmea* 'Flarorosea' v 'Fasciata'

Olive Trevor

Second *Tillandsia disticha* 'Maxima'

Peter Paroz

General Meeting Program

May *Vr. fosteriana* and varieties

Popular Vote Any Genus Species or Hybrid

Beginners Class Billbergias Greg Aizlewood

June My Introduction to Bromeliads Members of the Chorus

Popular Vote Any Genus Species or Hybrid

Beginners Class Growing green leafed Tillandsias Bob Reilly

Convention Fund Raising**Raffle #2**

1st Bromeliaceae of Ecuador by J.M. Manganares.* \$270

2nd Bromeliads to the value of \$100

3rd Bromeliads to the value of \$50

* See page 21 for a review of this publication.

Some tickets at \$2 each in books of five are still available. This raffle will be drawn at the Combined Show in June. Enquiries and Tickets from :- The Convention Registrar

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

Bus Trips and Field Days Calender 2004

All enquiries, bookings and deposits where applicable, for the Field Days and Bus Trips should be directed to:-

Nancy Kickbusch, BSQ Field Day Co-Coordinator. Phone 07 3300 1704

Field Day Bus Trip

Date 28th August 9AM to 12PM

Location :- The home of Yves Daniel and Lindsay Gerchow
7 Orme Road, Buderim.

Sales 10 to 11.30 AM only.

Morning Tea: Members please bring a plate

Lunch 12.30 PM at the Waterfront Hotel, Bli Bli.

After lunch, *for bus patrons only*, a surprise visit to a lovely garden and nursery.

The bus will leave from the Uniting Church Hall, 52 Merthyr Road, New Farm at 7.30 AM with a pickup at the BIG W, Gympie & Webster Roads, Chermside at 7.45 AM. Return about 5.30PM

The total cost is expected to be \$25.00.

Field Day

The last field day for the year will be held on the 30th of October at the Olive Branch, the home of Olive and Len Trevor, 232 Canvey Road, Upper Kedron from 9 AM to 2 PM, commencing with morning tea.

Members please bring a plate. Plant sales from 10AM to 12PM only.

Lunch will commence at 12.30PM

There will be talks on various aspects of bromeliad culture and Conducted Tours of the bush houses.

The Presidents Page

Seasons of Change

This summer has seen some extreme conditions for our plants with temperatures reaching 41 deg.C. Periods of heavy rainfall have been interspersed with periods of extended dry conditions. High winds have rounded off this extreme mixture of weather. Naturally our bromeliads have been affected by this with some growers reporting significant scorching and drying of some plants. In my own conditions, I have noted two factors not seen in previous seasons: The first was the low incidence of plant scorching even under areas covered by 50% shade cloth. In previous years I have noted scorching at temperatures above 35 deg.C even under 70% shade cloth.

This has occurred on those days when the UV levels and the humidity were high. This year when those conditions occurred there was some wind and that seems to have provided enough circulation to prevent the build up that causes scorching. The second effect was also due to the high winds. All of my plants have produced many more dried leaves. This has largely affected the older, lower, leaves with new growth normal and vigorous despite the loss. At the time of writing (early April), I find that all plants are now enjoying vigorous and rapid growth and that the season has been good for flowering in all groups.

Democracy at Work

At the Annual General Meeting, elections were necessary for the offices of President and Vice President. This had not been the case for a good number of years when, on some occasions, we have had difficulty in having single nominees for these positions. It speaks well for the Society that a choice was available for members to exercise the democratic process. I would like to thank those members who supported me and have enabled me to continue my programme of development begun in 2002. It is now time to get on with the business of the Society and I hope that all members will join me in the work ahead.

As I have said since my return to the President's role in 2002, I believe that ALL members of the Society should have equal opportunity to share in the Society's activities. I do not support the belief that some members may be more equal than others. Our Society, like a number of others, is facing many pressures as we move towards the future. Our job is to see that the Society is maintained and developed for long term success.

Committee and Stewards

I would like to thank those Committee members and Stewards who retired at the last AGM. Their contributions to the Society carried us through a busy and successful year. I also extend a welcome to those new and returning Committee members and Stewards who have volunteered to take on and to continue on with the job in the forthcoming year. As we progress towards the Conference in 2005, the Society will need commitment and stability in our management group.

John Higgins

GRACE GOODE O.A.M. at our April Meeting.

How lovely to see the "Queen of Bromeliads," BSQ Life Member, Grace Goode, at our April meeting. Grace had attended the formal investiture ceremony at Government House on the same day as our meeting and shared her genuine pleasure with us. The shining gold O.A.M. medal was as bright as Grace's smile.

Grace remarked that it was a pleasure to go to Government House and meet the Governor; and she did not miss the opportunity in asking the Governor, "Where are your bromeliads?" The Governor assured her that there were bromeliads growing in the stately grounds of Government House.

At our meeting, President John welcomed Grace and congratulated her on the recognition for her dedication to the cultivation and hybridisation of bromeliads. On behalf of The Bromeliad Society of Queensland Inc., John presented Grace with a framed certificate of congratulations. A celebration cake was cut by Grace and shared with all members at supper. Congratulations Grace! You deserve it!

[.....and yes, I did bow!]

Anne McBurnie

Those members who have read Rob Smythe's notes will know that he is an enthusiastic advocate for the use of a natural predator -mesocyclops- to prevent mosquito wrigglers from developing in tank bromeliads. Rob's latest observations indicate that where there is a heavy build up of decaying organic matter in the cup and leaf axils, the predators die out and wrigglers can develop. Worst case is overhead trees with lots of tiny leaves !!

This observation has implications for landscape gardeners intending using natural overhead shading. "If I was designing a bromeliad garden, I would do what my family have done. Shade using large leaved plants. Mostly palms, tree ferns for horizontal shade and yuccas and cordylines for vertical shade" says Bob.

The Editors Desk

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Authors are responsible for the accuracy of all information in their articles.

Email address edbromsocq@ozemail.com.au

Bromeliads belong to the class* Monocotyledoneae, the smaller of the two classes into which all flowering plants are divided. Monocotyledons are distinguished by a single seed leaf in the embryo, parallel venation in the leaves, and flower parts in three's or multiples of three.

* Class is one of the higher levels of classification of plants.

Classical and current botanical text books have placed monocotyledons on the same rank as dicotyledons; as major divisions of Angiospermae (flowering plants). Modern DNA analysis had indicated that monocotyledons have evolved from dicotyledons. !!

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STOP PRESS

Second Philippines Bromeliad Conference 24-27 July 2004.

Cagayan de Oro City, Northern Mindanao. Conference venue: Grand Caprice Hotel at the Limketkai Center. Supported by the Dep't of Agriculture and the Northern Mindanao Ornamental Horticulture Foundation, including the Greater Northern Mindanao Bromeliad Society. Guest speakers, exhibits and displays, bromeliad sales, rare plant auction, collection tours in a tropical Summer.

Contact: Ruben Diaz Snr., Beebai's Garden, Purok 10, Baloy, Cagayan de Oro City 9000, Philippines.

Email: rubencdiazsr@yahoo.com Phone: 0011-63-8822-733079. For a Website report of the first Bromeliad Conference there and links to the region's exotic attractions, visit:

<http://agri10.norminet.org.ph/News%20&%20Events/August/1st%20bromeliad.htm>

Study Group Report

Bromeliad Society Study Group meetings are always interesting. Much can be learned as members voice judgement, estimation and even personal views, on plants and subjects forwarded for discussion.

The first meeting for 2004 was held on the 24th of January at the Cutcliffe' home, Springwood. Chester and Dorothy, our perfect hosts, provided members with an array of interesting plants for discussion. Bromeliads throughout their well kept garden are visually beautiful. Their shade house areas are filled with many species and hybrids. From abundantly prolific seed trays, each member was given several *Aechmea angustifolia* seedlings.

The February meeting was held at the home of Len and Olive Trevor. Necessary to the completeness of each meeting, plant showing has become an integral component. At this meeting, were many plants cultivated from seed. With the multi-bracted vrieseas (second generation), parent names were supplied, enabling members to identify some inherent characteristics. Members acquire the seed from their cross pollination program.

A month of very hot days has had a devastating effect on bromeliads planted in full sun. Members expressed concern as to the number of plants lost to leaf burn; not only for Society members, but also the general public. The general public view bromeliads as tough, easily grown carefree plants. With some reservations, this is quite true. However, when advised 'can be grown in full sun' the public's assumption is exactly that, hours of unprotected sunlight. While there is no intent of misrepresentation, Study Group members believe there is a need to explain the boundaries, the meaning or signification of the phrase, 'can be grown in full sun'.

The March meeting was again held at the home of Len and Olive Trevor. Olive gave an in depth talk on the different varieties of *Tillandsia cyanea*, from the variegated to the tissue cultured *Tillandsia cyanea* "Paradise". Several plants were tabled, showing members each distinguishable characteristic. Noticeable differences in bract sizes were discussed. It was suggested, contributing factors such as cooler moist growing positions, peat moss throughout the potting medium and dense shade cloth, having or exerting some influence to the size of plants and the colour of their bracts. There was no variation in the colour of each flower.

Three tabled plants took pride of place. The splendid silvery banding of *Aechmea chantinii*, the intricate markings of *Ae.* "Samurai", and the broad silvery leaves of *Ae.* "Little Harve" brought discussions to an end, and closure to another great Study Group meeting.

Doug Upton

VALE OLWEN FERRIS

It was with great sadness that the Society learned of the recent passing of Olwen Ferris. Many of our members will have fond memories of Olwen, having visited her and her husband Hilton at their Paradise Point home on the Gold Coast. I first met her about 30 years ago as a result of an advertisement in *Your Garden* magazine. In those days it was very difficult to obtain bromeliads and Olwen was one of the few people who advertised them for sale. On our first visit to her garden, we were amazed to see so many plants in one collection. During these visits a tour of the garden included a running commentary on the plants, where they were obtained and the particular points of interest of each.

I saw my first tillandsias in her collection and was thrilled to obtain a few small offsets from time to time. I still have many of the original plants and each time I look at them I recall many fond memories of the gracious and friendly lady who provided them. The beginning of the Combined Show resulted from discussions I held with Olwen over a number of visits. Our show was based on a similar combined show staged by the Bromeliad Society of Australia and the Cactus and Succulent Society of NSW held each year at Kogarah in Sydney.

The sales stickers currently in use for our plant sales were developed from the tie-on shipping tags used for those shows and described to me by Olwen. These stickers have been developed through several stages to their present form. Olwen gave permission for us to use the line drawing of a *billbergia* from her sales catalogue as our bromeliad illustration on our second combined show flyer in 1979. Olwen was a founding member of the Gold Coast Succulent and Bromeliad Society and continued her involvement with that group while her health enabled her. Those who knew her will grieve at her passing but will retain fond memories of her contribution to our collections and the bromeliad world.

John Higgins

Sometimes bromeliads start to deteriorate very rapidly after they have flowered. Usually this means the plant is rotting. This sometimes happens in very hot weather to certain *guzmania*, *vrieseas* and green-leaved *tillandsias*. In these circumstances, remove the offsets immediately, irrespective of their size, as they will probably die when the parent plant dies.

Bob Reilly

THE AFRICAN BROMELIAD

With the exception of one species, all bromeliads are native to North and South America and nearby islands, for example, the West Indies.

The exception is *Pitcairnia felicianae*, named after Monsieur H Jacques-Felix who collected it. The plant was originally described, in 1932, as a member of the Lily Family, namely, *Willrussellia felicianae*. It "gained" its true identity in 1938. (Rauh, 1970)

P. felicianae was found growing on rocks in cliffs, at Kindia, Guinea, West Africa. Agnew(1965) speculates that, as the plant is known from only one location, it may not be plentiful.

The plant is grass-like in appearance. It has a bulbous base, and narrow leaves that only have spines at their base. The plant forms large clumps about 50 cm high. At flowering, it has an unbranched (simple) spike, about 20 cm long. Its flowers have yellow petals. A more comprehensive description is given in Rauh (1970), which can be borrowed from the Society's library.

According to Agnew (1965), the bromeliad taxonomist, Dr. L B Smith stated that the location of this species provided additional support for the theory that that the Americas and Africa were one continent, millions of years ago. (Other evidence also supports this view.)

While *P. felicianae* is of no particular horticultural significance, its unique location guarantees the plant a place in bromeliad history!

References

- Agnew, R. (1965) A note from Clare Phillips, *Bromeletter*, v.2(3), pp19-20
 Rauh, W. (1970) *Bromeliads for Home, Garden and Greenhouse*.
 English translation in 1978 by Temple, P. and Kendall,
 H. L. Blandford Press; Poole, Dorset.

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If you are using a new potting mixture, do not immediately re-pot all your plants using it. For one reason or another, it may prove unsuitable for some of your plants. By initially re-potting only a few plants and then increasing the number of plants over time, you will establish which plants' grow best in the new mixture and those which are better in other mixes.

Pitcairnia's are sometimes overlooked because of their rather plain appearance when they are not flowering. However, the green leaves, which often rise to a height of 70 cm or more, can make an effective "backdrop" for their more colourful colleagues. The pitcairnia's' long-lasting inflorescence is a further reason to use them in this way. Bob Reilly

FOLIAGE VRIESEAS Part 1

Most Vrieseas are grown for their inflorescences, rather than their foliage. However, there is a group of Vrieseas which have attractively marked leaves as well as, in some cases, eye-catching inflorescences. In this article, I describe them as the foliage Vrieseas.

The Vriesea genus was recognised by botanists in 1843, and named in honour of the Dutch botanist, H. de Vries. Even before that date, foliage Vrieseas were introduced into Europe, with *V. splendens* arriving in 1840.

While there are several hundred Vriesea species, over a thousand hybrids exist, most of which have not been formally registered. This is unfortunate, as it is difficult to easily "spread the word" about an outstanding, unregistered hybrid.

The foliage Vrieseas are mainly epiphytes and occur in moist, shaded conditions in nature. Some of them occur only in environments which are quite different to those prevailing in coastal Queensland. As these plants do not thrive in this environment, they are not discussed in this article (Such plants are often referred to as "cool climate, high altitude" species. If a plant is described in this manner, it is unlikely to do well in coastal Queensland. However, as there are some exceptions to this "rule", it is always worth asking experienced growers if the desired plant will grow well at your location).

All of the foliage Vrieseas have "tanks" formed by their central leaves. These tanks store water which help the plants to meet their moisture requirements. All have spineless leaves.

Potting mixtures used successfully include:

A mixture comprised of 1 part charcoal to 7 parts of fertiliser – treated pine bark chunks. The chunks should be about 15 to 20 mm in diameter and treated with a special type of fertiliser, which is available from the Bromeliad Society of Queensland;

Well composted pine bark to which Nutricote or Osmocote is added when the plants are potted. Some people prefer to add Cocopeat or peatmoss to this mixture to improve its ability to retain moisture.

Coarsely ground "clinker" to which Nutricote or Osmocote is added.

All of the foliage Vrieseas appreciate receiving regular feeding with liquid fertiliser. It is essential to do this if you wish to maximise the size of the plants' inflorescences. A fertiliser such as Phostrogen applied at weekly intervals, at the concentration recommended by the manufacturer for indoor

plants, produces good results for many growers.

These plants vary considerably in their production of offsets. Most produce offsets arising from the leaves near their base. They will typically produce two or three offsets after they have flowered. Remove these when they are one third to one half of the mature plant's size. Another crop of offsets can then often be induced by fertilising the "mother plants" with Nutricote or Osmocote.

Another group of foliage vrieseas only produce one or two offsets halfway or more up the plant's "stem". These plants are sometimes described as "upper puppers". A fair bit of skill is needed to successfully remove these offsets. So, it is advisable to seek advice before you attempt this action for the first time. If the offsets are removed, (do so when they are one third to one half of the parent plant's size) another one or two offsets may be produced by the plant. Because of these plants' reproductive habits, most nurseries produce them from seed or through tissue culture, rather than relying on offsets.

Some foliage vrieseas produce small, seedling-like offsets (known as adventitious offsets) near their base. This event usually occurs well before flowering. Remove them when they are 7 cm to 10 cm tall. These plants may also produce offsets from the lower or upper parts of their stem.

Offsets removed during the periods mid September to late November, and mid February to late March, will often grow better than those removed at other times. Pot the offsets straight into the mixture you use for mature plants.

Many of these plants grow best under medium density (70% to 75%) shade cloth during spring, autumn and summer. 50% shade cloth will often produce the best results in winter. Plants with leaves having brown spots, or a bleached/yellowed appearance, are receiving too much light.

These plants like plenty of air movement around them. Place them on benches at least 20 cm above the ground. If practical, space the plants so the edges of their outer leaves are only just touching (Regrettably, due to my desire to own "just one more plant", I seldom follow my own advice on this point, but the plants do suffer because of overcrowding!)

In winter, water the plants heavily once a week, in the morning between 7am and 10am (if practical). During summer, water them heavily at least twice a week during the early morning (6am to 8am) or late afternoon (4pm to 6pm). If practical, dampen the foliage once a day in early morning or late afternoon when the temperature exceeds 30°. (A heavy watering results in water coming out of the pot's base for several minutes).



Vriesea ospinae



Vriesea fosteriana v. *seideliana*



Vriesea gigantea v seideliana



Vriesea saundersii Hybrid

The foliage vrieseas can suffer from flyspeck scale. This insect pest can be treated with a systemic insecticide such as Folimat. Some are susceptible to grasshopper attacks. These are best dealt with by squashing them (They are easy to catch early in the morning).

Only one of the plants described below is a hybrid. This does not reflect a lack of beautiful Australian and overseas hybrids. However, because these hybrids are usually only available in very limited quantities, I have decided not to describe them. If you wish to look at photographs of some of these hybrids, I suggest you refer to Ronald Parkhurst's book (Parkhurst, 2000), which is available from the Society's library. This book highlights many of David Shigi's, (a prominent Hawaiian hybridist) plants. If you have internet access, look at the hybrid Vrieseas in the Florida Council of Bromeliad Societies' website: <http://fcbs.org>.

The plants listed below vary considerably in their availability. However, if you contact the commercial growers who advertise in *Bromeliaceae*, "haunt" the plant sales table at Society monthly meetings, field days, and the June show, and make your "wish list" known to some of the members who've been growing these plants for several years, then you stand a reasonable chance of acquiring 75% or more of them over a period of 2 years. Be willing to buy an immature, rather than a mature, plant as they are more readily available.

As well as Parkhurst's (2000) book, I have drawn extensively on the descriptions contained in Padilla 1973, 1980. The plants listed below do not constitute anything like a complete listing of foliage Vrieseas.

bleherae. About 15 leaves, 2 cm wide at their base, form a small rosette about 40 cm wide and 20 cm high. The underside of the leaves typically are purple in colour, with the upper surface being grey-green. Padilla (1980) states there is a form with dark colouring on both leaf surfaces. A yellow sword-shaped inflorescence, which is 10 to 15 cm long and about 4 cm wide, is located at the end of a yellow stalk (floral scape) which rises well above the plant's leaves. The flower's petals are coloured yellow. This is a vigorous plant which usually produces five or more offsets.

There is a variegated form of similar dimensions, and vigour, to the non-variegated form. However, the variegation is quite variable and the plant produces non-variegated, as well as variegated, offsets.

fenestralis. About 30 leaves, 5 cm wide at their base, form a rosette up to 60 cm wide and 30 cm high. The leaves are tightly packed, and their tips curl back on themselves, giving the plant a compact shape. The upper surface of the leaves is a mosaic of dark green and light green patches. As

the leaves age, the dark green patches appear to become more dominant. The underside of the leaves is covered in small dark brown-red circles. The inflorescence consists of up to 30 flowers, with yellow petals, spaced out along a branching spike.

fosteriana. About 20 leaves, 5 to 7 cm wide, form a 60 cm wide rosette. There is considerable variation in leaf colour. Typically though, the light green leaves have dark red to purple tips, and a fine network of dark green lines on a light green background. The underside of the leaf is typically flushed red, and this colour suffuses through the whole leaf in bright light. In other forms, maroon banding of varying widths and density occur on both leaf surfaces. The banding takes on a "speckled" appearance in some forms. In others, narrow white bands occur.

Many of these forms have resulted from intensive selection programs undertaken by nurseries on seedlings of this species. Some of the more desirable forms are labelled in Queensland as: *fosteriana* v. *seideliana* "Red Chestnut", *fosteriana* v. *seideliana* forma *rubra*, *fosteriana* 'Bianca', and *fosteriana* 'Speckles'.

Typically, the plants have a floral scape about 100 cm long at the end of which there are about 30 flowers spread over a distance of around 50 cm. The plants produce seed quite readily. These plants will take more light than the other foliage Vrieseas described in this article. They have been extensively used in hybridisation programs.

gigantea. About 30 leaves, 7 to 10 cm wide at their base, form a large rosette up to 100 cm across. The dark green leaves are marked with a network of light green, particularly towards the plant's centre. The leaves are quite thick. In the plant described as *gigantea* v. *seideliana* (once known as *tesellata* 'Nova'), the leaves have white blotches, particularly towards their base, on a light-dark green background. Because of this feature, v. *seideliana* is the better plant to grow. The 150 cm tall inflorescence, which can be branched, has small yellow-petalled flowers scattered along it.

Continued

Bob Reilly

Some bromeliads grown in pots, for example most tillandsias, are quite sensitive to "wet feet" and can easily rot under such circumstances if a slow-drying potting mixture is used. One way to improve the drying rate of the potting mixture, is to use "mesh-type" plastic pots manufactured with holes in their sides as well as their bottom. Such pots can be obtained from some orchid nurseries.

Bob Reilly

Plant Breeder's Rights and Patents

by Geoff Lawn

In Australia, Plant Breeder's Rights (PBRs) are exclusive commercial rights to a registered new variety (cultivar). The rights are intellectual property, akin to patents, trade marks and copyright, administered by the Plant Breeder's Rights Office (PBRO) in Canberra. The program was first established under the Plant Variety Rights Act 1987 (PVRA) which was succeeded by the current Plant Breeder's Rights Act 1994 (PBRA) plus Bill Amendments 2002.

This scheme encourages plant breeding and innovation through the legislated grant of limited commercial use by breeders of new varieties. PBRs legally protect innovators in their research investment, selective breeding, raising and marketing new varieties, without which anyone could commercialise each new variety with no recourse to the innovator.

The PBRA is founded on and is revised from the 1978 and 1991 versions of the International Convention for the Protection of New Varieties of Plants. This Convention was established by the International Union for the Protection of New Varieties of Plants (UPOV), based in Geneva, Switzerland from which 53 countries to date (Nov.2003) model their plant patent standards, classifications, legislated procedures and regulations.

UPOV is an inter-governmental organization which also conducts or contributes to regular symposia on a range of related issues such as the genetic use restriction technologies (GURTs), Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in the World Trade Organization (WTO).

PBRs (or equivalent) must be applied for each new variety and in every country where PBR protection is required, a lengthy but cost-effective process. Not only cultivation bred but also previously undiscovered, wild collected unique clones may be eligible for PBR grants. It is possible also to have a new variety both PBR and patent protected as PBR protects the end product (the plant variety as a whole) whereas patents tend to protect the process or components of varieties, such as gene technology or gene sequences.

The PBRA defines "breeding" as including "discovery" and "selective propagation". In Australia the original Breeder or Discoverer (or if overseas, his authorised Australian Agent) initially applies to the PBRO, the official form (Part 1) requiring: applicant's personal details; breeder's

details; a brief description, proposed name (to meet ICNCP Rules) and photograph of the new variety to establish a *prima facie* case that the variety is distinct from other varieties of common knowledge; where the variety was bred and its parentage (if requested, full details are not publicly disclosed); a brief description of how the variety was bred; details of any application or granted rights for the variety in any other country; the name of an accredited qualified person (QP) who can verify the application particulars (as a non-consultant QP) and will supervise any test growing of the variety if required (as a consultant QP).

Accreditation as a QP is by application to the PBRO and based on qualifications and experience. Both a non-consultant and a consultant QP's accreditation must be annually renewed with the PBRO. Non-consultant QPs act for their own or their employers' varieties, whilst consultant QPs operate on a fee for service basis. The consultant QP must have specialist technical knowledge and expertise of the genera or the varieties he is handling, their precise official descriptions (QPs application form Part 2 verifies Part 1), data collection, photographs and management regime. The consultant QP's role complements the PBRO Examiner's role in ensuring the particular PBR grant is legally sustainable in the event of any later infringement and subsequent litigation.

Another crucial PBRA criterion for PBR eligibility with "newness" is that the new variety must not have been exploited or only recently been exploited. At the PBR application lodgement date, plant material of the variety must not have been sold to another person by, or with the consent of, the breeder, either: in Australia--more than one year before that date; or if outside Australia:

(A) in the case of trees or vines--more than 6 years before that date; or

(B) in any other case (e.g. ornamental bromeliads) --more than 4 years before that date.

Some Breeders wrongly interpret the legislated rules on time limit to mean only sales to the "public" or in "commercial quantities" constitute a sale, but this misconception could result in their PBR application being rejected as ineligible. PBRA exemption clauses allow the breeder (or another person with the breeder's consent) to sell his new variety (or plant material thereof) if the sole purpose is to multiply it on behalf of the breeder and /or by the sales agreement, immediately after the plant material is multiplied, the same vests in the breeder.

Test marketing the new variety up to 12 months only prior to the PBR application lodgement date is permitted but risky, as there is no PBR

protection. After the PBR application lodgement, the PBRO may grant provisional legal protection during the pending process. Each variety granted provisional protection must be labelled according to PBRO guidelines otherwise any alleged infringement claims (which apply retrospectively) during this period may be invalidated.

The applicant and QP are responsible also for selection and supply of comparator varieties (most similar existing varieties which are of common knowledge at the time [VCKs]) for inclusion in the mandatory comparative growing trial at an authorised, central Testing Centre. The plant stock must be visibly healthy and free of pests and diseases. The number of plants for each variety required for the testing is determined by the mode of propagation and the UPOV rigorous technical guidelines being applied. PBRO Examiners' designated criteria of Distinctness, Uniformity and Stability (DUS) are defined:

Continued

The berries from some trees release chemicals which will "stain" leaves of susceptible bromeliads. For example, if the berries from umbrella trees are allowed to accumulate on a shadehouse's roof, rain can wash chemicals from the berries onto the leaves of bromeliads below, and result in unsightly stains on the leaves of vrieseas, guzmanias and tillandsias. So, it is worthwhile periodically removing all plant material which accumulates on your shadehouse roof.

Bob Reilly

Bromeliad Society of Queensland Inc.

BOOKS FOR SALE

Bromeliads -- Next Generation by Shane Zaghini	\$33.00
Tillandsia Handbook by Hideo Shimizu and Hirouli Takizawa	\$58.00
Growing Bromeliads by The Bromeliad Society of Australia	\$21.50
International Check List of Bromeliad Hybrids by B.S.I	\$1.50
Bromeliads -- A Cultural Manual by B.S.I	\$5.00
Bromeliads for the Contemporary Garden	\$36.00
A Guide to Beautiful Neoregelias by S. Zaghini	\$20.00

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Bromeliaceae of Ecuador by Jose M. Manzanares.

Thirty years ago, Amy Jean Gilmartin wrote a book of some 250 small pages, on the same subject; and which had lots of line drawings and small black and white photographs. It is a well thumbed part of my library! Twenty years ago, Jose Manzanares decided he wanted to do a book on the same subject and he has finally achieved his goal. His book(s) is much bigger and comes in three parts. The first part on Bromelioideae has just been published and I would have been one of the first Aussies to receive a copy. Now, I have a super-duper reference book and Amy Jean will be archived! The other two parts are on Pitcairnioideae and Tillandsioideae.

Ecuador, as the name suggests, is on the Equator and you would expect the weather to be hot all the year around and humid for most of it! However, it is split by the high Andes Mountain chain which modifies the weather. If you are a bromeliad fancier from Cairns, you will see plants you will want. As you proceed south, more species will be in the too-hard-to-grow category until you reach Adelaide and Melbourne where it becomes predominantly a reminder of 'if only' as well as telling you all about the plants.

Those of you who surf the Internet will be aware of the superlatives expressed by others and now I know what they mean. It is hard cover with 232 pages, 24cm x 30cm, with 341 excellent colour photographs, some full page size and many from habitat. So if you only want to look at the photos this will keep you amused for ages. But that's not all! Each species has a description plus interesting comments. Some of the terms used in the descriptions are different to usual but are easily understandable.

I have always wanted Bromeliad books that are complete in themselves, like Leme's books on Nidularium etc, and this is why I consider this book as essential to every Society or Group's library. The cost may seem prohibitive to some people when you consider there are 4 books in all (2 for the Tillandsioideae!). The first one costs US\$120 and then you have to get it to Australia. Sharing the cost with others means it is available to a wider readership, as long as you don't fight over it!

One way is via Selby Botanical Gardens Press who will send it for US\$8 by seamail. One advantage I have found is that you can pay on-line using your Visa type card saving Bank Cheque charges.

Try www.selby.org/research/pubs.htm If not then try Selby Botanical Gardens Press, 811 South Palm Avenue, Sarasota, Florida 34236-7726, USA

Derek Butcher

Those Early Days Part 2.

Len Butt continued writing horticultural articles for the magazine 'Queensland Gardens', and after the Bromeliad Society of Australia was formed in 1963, he became one of their members and began writing for the Society's newsletter 'Bromeletter'.

Len was first introduced to Nezzie Misso by Peter Paroz during a home visit around 1963. Four years later, these three enthusiasts became our Society's inaugural President, V-President and Secretary/Editor. Nezzie Misso was known as the Tillandsia Man for obvious reasons; he was renowned for his expertise in cultivating tillandsias from seed. A quietly spoken and gentle person, Nezz lived in the Brisbane suburb of Taringa and worked in the University of Queensland's horticultural section. Among his tillandsia collection, he grew other bromeliads, *Ananas*, *Portea*, *Puya*, *Dyckia* and *Hechtia*. He also managed to accumulate a fair collection of orchids.

Most of those who visited the Misso home spoke of his unique method of germinating tillandsia seed. He fashioned a tree made of guava branches bound with untreated coir rope. Available seed was spread by hand over the rope and misted with water (several times a day in periods of high temperatures and low humidity). After germination, Nezz would foliar feed with a weak solution of fertilizer. Other tillandsia trees were constructed using 3/8 round steel rods. The steel was welded to form a small branched shape and bound with coconut fibre to about 1 inch in diameter. Mounted upright on a base, these small trees were portable. Seedlings from the coir rope tree were transplanted to the smaller branched shapes, odd pieces of driftwood and hundreds of suspended small wooden blocks.

Nezz once wrote — 'self sown seedlings were a problem. Growing so many plants it has become difficult to keep track. It is impossible to name these seedlings until they produce recognisable leaves. It is a challenge to correctly name tag them, but this is an important part when cultivating bromeliads' Nezz did some hybridising, however his American contacts kept him well supplied with fresh seed.

Nezz left the Taringa home and moved to Dell Street, St. Lucia. His new bush house became a Mecca for collectors where many saw *Hohenbergia*, *Quesnelia*, *Pseudananas* and Tillandsias for the first time. Nezzie Misso was arguably the earliest collector of any note — certainly in this area — and probably had the most extensive Australian collection of that time. In 1984, to commemorate our Society's inaugural President, a Nezz Misso Memorial Lecture was held. The topic was 'Tillandsias'.

Other 'Early Days' bromeliad collectors were Barclay and Nora Binnie who lived at Wellers Hill, Tarragindi. They built a large glass house which enabled them to raise beautiful plants protected from the elements. Barclay also dabbled in seed raising, with an interest in producing an improved form of *Vriesea carinata*. A fitter and turner by trade, Barclay with his friend Maurice Jones, a boilermaker, manufactured equipment for our annual shows at the Brisbane Exhibition: plant stands, pot holders and a chain fence for the displays. Maurice Jones lived in Arana Hills. His home was built on a steep allotment much like a precipitous rain forest of dense trees, various shrubs and bromeliad species. Maurice, like Barclay, was an ardent worker for our Society.

Alfred James Kemp was nicknamed Nick because of a friendly joke. The name stuck, and to most of his friends, Nick Kemp was the only name he ever used. Nick served in the army, before and during World War II as a Lieutenant. After the war, he worked for the Tennyson Power Station. His friends would constantly rib him about his choice of employment after coke and charcoal appeared in his potting medium.

Nick's bromeliad collection at Coopers Plains was cultivated in a large bush house, stretching almost from fence to fence. His collection contained several species desperately sought by other growers. He enjoyed the company of bromeliad enthusiasts, and once said, "Cultivating bromeliads was almost as exciting as going fishing".

A member of the Moreton Island Fishing Club, Nick was keen, and like all fishermen, was known to tell an occasional tall story. However, not all of his stories were an exaggeration. He told of his friendship with a clever lady who was an expert at pulling sea worms from sandy beaches. Sea worms are excellent bait; and the ability to catch them is admired by all fishermen. But, in those days, a woman, no. It was unbelievable a woman would even want to try. The lady with this great gift was our own Grace Goode.

Nick often spoke of Grace Goode, her beautiful bromeliads, her hybridizing activities, intergeneric and bigeneric. Her garden contained areas which were set aside for nurseries while other areas were described as 'geriatric wards.' Grace has said, she named her hybrid *Neoregelia* 'Beelzebub' (a *Neoregelia marmorata* / *chlorstricta* cross) for Nick, because of his devilry. (Much of the character of Grace Goode was documented in Bromeliaceae, Vol. XXX, Number 1, Jan/Feb. 1997.)

Two years before our Bromeliad Society was formed, Peter Paroz joined the Bromeliad Society of Australia. On a regular basis, Peter contributed articles to the official journal 'Bromeletter'. Arguably one of

his best, was a review of flower induction in bromeliads. He wrote of a number of plant families where flowering could be induced out of their normal flowering season. For example, some flowering bulbs could be triggered into early flowering by an artificial winter in the refrigerator; and some orchids could be induced by manipulation of the day length. The Bromeliaceae family is unusual, in that flowering can be induced by chemical treatment of the meristem, the growing point of the plant. Peter Paroz has had continuous membership over the life of our Society, from its inception in 1967 to the present day and in 1984, was elected a Life Member.

To understand how Olwen Ferris became interested in bromeliads, one has to go back to her childhood life on a small mixed farm at Bannister, in New South Wales. Olwen's father grew certified seed potatoes; each crop was inspected twice a year by Government Agriculture Inspectors. While the two Inspectors worked in the local farming district, Olwen's parents would house them overnight. Knowing Olwen's mother was a pot plant enthusiast, each man would arrive carrying a fragile brown paper parcel. Olwen remembers the excitement as each parcel was unwrapped — more beautiful potted plants. As the eldest child, Olwen was called upon to assist her father cross pollinate selected potatoes in an attempt to breed a new virus free hybrid. Olwen has written, "What better training could I have had for my later interest, cultivating new bromeliad hybrids."

Some years later, Olwen married Hilton Ferris and moved to their new Thornleigh home. Their garden was built around existing native trees, a perfect area for a small collection of bromeliads from her mother's garden, and here, Olwen began reading about bromeliads in an effort to understand their needs and try to correctly name each plant in her collection.

When the Bromeliad Society of Australia was formed in 1963, Hilton and Olwen attended the first meeting, changing their lives forever. The Society offered them contact with other bromeliad enthusiasts, and of course, further knowledge to feed their addiction. From childhood, the so called bromeliad bug had captured Olwen, she loved tending her mother's plants. Her favourites were *Billbergia pyramidalis* var. *pyramidalis* (now *Billbergia vernicosa*), *Billbergia nutans* and *Cryptanthus* var. *rubra*.

Hilton and Olwen purchased property in Queensland at Paradise Point at the north end of the Gold Coast. It quickly became a stopping point for bromeliad people passing through on holidays. Their 'Bromeliad Display Garden' was quite beautiful. Olwen was the editor of Bromeletter for many years

This brief written account of some of our early members is offered as a

token of appreciation, an acknowledgement of what they began thirty seven years ago that subsequent members have come to enjoy — good fellowship among all people interested in bromeliad culture.

Doug Upton

(The next article in this series individual profiles some of our hard working members past and present)

Observations of a Novice Seed Gatherer

I never really took much notice of the seed pods on tillandsias until I decided to attend a meeting of the seed raising group about 2 years ago. I had played around attempting to pollinate a few of the flowers with little or no success.

After several months of meetings, I felt I was going to have some success. "How can you tell?" I hear you ask. My basic observations of *Tillandsia ionantha* flowers is that the stigma is receptive when it has 'moist' appearance (which may only last a few hours); and a pollinated* flower lasts at least one day longer than a flower which was not pollinated.

So it is an early morning ritual; down to the shade house to check on the flowering plants to see what I deem to be pollinated and what I have missed. I do not mark the pollinated flowers but can tell by the pollen on the older flowers.

T. ionantha is quite easy to pollinate but I seldom get bunches of seed pods on the one plant. *T. ionantha* var. *stricta* on the other hand frequently get bunches of five or six seed pods on the one plant.

This plant was pollinated in November 2002. In February 2004, these seed pods have just begun to ripen and burst open. One thing is for certain with tillandsia seed, do not be in a hurry.

Then, of course, germinating the seed and growing the seedlings to maturity is another story.

Vivian Duncan

* (Pollination is the act of transferring pollen from the anther to the stigma. Fertilisation occurs when a germ tube develops from a pollen grain, grows down the style and fertilises an ovum in the ovary. If sufficient ova are fertilised, the ovary develops into a seed pod (capsule) with viable seed.

Since all bromeliads are monocotyledons, the stigma is three lobed. All lobes should be well covered with pollen. Some flowers have a long style and others a short style. Pollen from a short style flower is unlikely to develop a germ tube long enough to fertilise a long style flower !!!)

Ed

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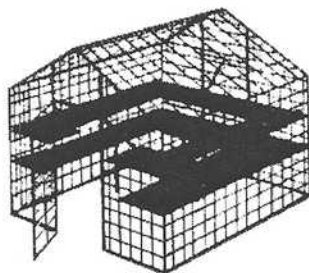
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