

BROMELIANA

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BIGENERICS

by Derek Butcher

(Excerpted from The South Australia Gazette, August, 2008)

Thanks to members rallying to the cause there were lots of bigenerics on display. First we handed out a listing of 51 nothogenera to show that much crossbreeding has been made in the past. A bigeneric occurs when one species from one genus is crossed with a species from another genus. This term is easier to understand than the official term nothogenus.

To my mind, in *Bromeliaceae* all bigenerics are mules in that they cannot set seed nor provide viable pollen. I have yet to be proved wrong even though several have challenged this. When I have asked for proof the discussion ends. A Trigenic has also been mooted which would also prove that a bigeneric can be fertile but this also lapsed.

So far, bigenerics have only been done within a subfamily: thus *Pitcairnioideae*, *Bromelioideae* and *Tillandsioideae*, mainly, I believe, because the seed shape has a great bearing on close relationships. However, I have had a claim by the Cuban Pineapple people that they successfully crossed a *Tillandsia fasciculata* with an Ananas but when I asked for proof, all went quiet. In another example Chester Skotak had crossed a *Guzmania* with a *Pitcairnia*. The resultant grass got to about 2 inches high and promptly died...

Bigeneric hybrids seem to be easier to make if between two similar genera such as *Nidularium* and *Neoregelia* which also grow in close proximity but would be harder if between say *Hechtia* from Mexico and *Dyckia* in Brazil.

A hybrid between a *Dyckia* and a *Hechtia* (*xDycktia*) has an Australian flavour. In 1991 Don Beadle picked up from a Bromletter article that Olwen Ferris had crossed a *Dyckia* with a *Hechtia*. What he failed to pick up was that Olwen in a later Bromletter announced she got no seed! So don't count your chickens before they hatch. (Bromletter is the Journal of the Australian B.S. - Ed.)

When we first started the SA Bromeliad Society we all grew *xOrthotanthus* 'What'. Not only was it easy to grow but when you realised

you could say *Orthotanthus* 'What' it gave you a warm fuzzy feeling. The problem was it grew from self set seed so it is now just *Orthophytum* 'What'.

In 2003 a chap in Florida claimed the smallest hybrid *Dyckia* which flowered when only 4cm in diameter. He wanted to call it *xDylirium* 'Angelita' (what a name!) because Harry Luther said it had links with *Encholirium*. We know that *Encholirium* are very close because only recently some *Dyckia* got transferred to *Encholirium*, but I could get no reply from Harry on the



Orthophytum 'What' (I changed the label from xOrthotanthus 'What')

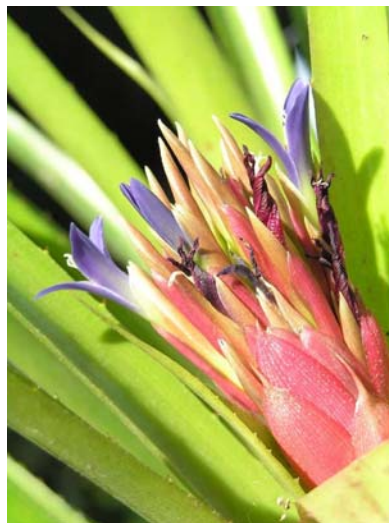
NEXT MEETING - Tuesday, October 5th, 2010 promptly at 7:00 P.M. at the [Ripley-Grier Studios](#)
[520 8th Ave. \(between 36th & 37th St\) Room 16A - 16th floor](#)

HOW ARE YOUR TISSUE CULTURE PLANTS GROWING? - Members are asked to report on the progress or lack of it of the tissue cultures they bought in previous plant orders, and to bring in a few examples for a cultural discussion. Please bring in plant(s) for sale and for Show and Tell.

subject, so as far as I was concerned it was still a *Dyckia*. Meanwhile they were being sold at US\$70 a piece. Dennis Cathcart knew about this and reported to me that they grew from self set seed too, so the *xDylirium* was well and truly dumped. With the close relationship between these two genera it is possible this name may rightly reoccur!

Succeeding with a bigeneric hybrid seems to be one of luck rather than expertise. In the early 1990's we visited Bill Morris near Newcastle and he offered me a stack of old letters he had from the 1960's with many links to bromeliad growers of the time. You see, Bill used seed from the Australia cycads as bait to get Bromeliads into Australia and he was successful on many occasions. In fact, I would say that Bill was one of our unsung heroes in getting so much new Bromeliad material to Australia in those early years. Anyway, back to the silverfish chewed letters that I sorted from date order to correspondent order. What revelations! In one batch we had Bill bragging to Mulford Foster that he had crossed *Billbergia nutans* with *Neoregelia carolinae* in the early 1960's. Bill was bragging because Mulford Foster had been trying for years to get a bigeneric to 'stick' and Bill had pipped him at the post. Such was Mulford's dismay that he categorically refused to believe what Bill had done. This made Bill disappointed too, because this bigeneric did not get named until 1991 when I pushed for the name *xNeobergia* 'Noddy'.

Do bigenerics occur in the wild even though they have reached an evolutionary dead end? Certainly they were reported (to have been found) in the early 1900's but there seems little proof that this was the case. Only recently do we have *xHobenmea itaipuana*. In the 1980's Elton Leme named 3 *Nidulariums*: *edmundoi*, *fraudentum*, and *lyman-smithii* all based on Seidel collections, but where he saw oddities that made him uncertain of the genus. In 2000 he moved them to *xNiduregelia* and, although he suggested they were made in cultivation, he continued with the Latin name linking it to wild origin. What is interesting is that for the first two, he had finds made at least 100 miles from each other. The



X *Neobergia* 'Noddy' (S.A. Gaz.)

mind boggles as to how the same two parents were involved so far apart. I still think he should have given them anglicised names and put them in the Cultivar Register.

While Elton was having his problems with these three species I was wondering what to do with a plant from Ruby Ryde which also has tenuous links to Seidel. After many articles in Bromeletter with me changing my mind it was eventually called *xNiduregelia* 'Ruby Ryde'! Clearly, *xNeophytum* is a favourite of Adam's and he had brought in several examples. He didn't bring in the main parent *Orthophytum navioides* because we can't grow it in Adelaide, but he had photos instead. We even had a similar looking *xOrthomea* 'Powder Puff'.

There were several *xCanmea* and one *xVrieslandsia* 'Heavenly Wings'; this one seemed to be struggling from the effects of the import gassing but is not yet in heaven, so we keep our fingers crossed. Because *Vriesea* and the green leaved *Tillandsias* have similar inflorescences there have been few really outstanding *xVrieslandsia* produced. One humdinger is 'Marichelle' promoted by Chris Larson in Melbourne where *Tillandsia imperialis* was crossed with a *Vriesea* hybrid to give a robust hybrid.

xNeomea has been done many times with nothing really outstanding because the *Neoregelia* seems to dominate, causing the inflorescence to have a small scape and causing the flowers to occur well down in the leaf cup. One called *xNeomea* 'Santa Marta' Adam thought was a *Neoregelia* and I made a weak joke about it. Who went home and looked at the Bromeliad data bases for 'Santa Marta'? Well, I did and it is a fascinating plant that originated in a nursery in Colombia and nobody has bothered to check the inflorescence. Lainie could do this but she may like to wait until her plant offsets when she can remove the total inflorescence and



xVrieslandsia 'Marichelle' photo by C Waterman

x *Vrieslandia* 'Marichelle' (Larson)

get it to me as long as it is not too mushy. I will butcher it just as little boys take wings off flies, just to see what it looks like. I had a skeptical nurseryman in northern NSW who I got to dissect some of his *Neoregelia* and *Nidularium* and bigenerics. I opened a whole new world of wonder for him and

now I can't stop him!

xNiduregelia are just a variation between each of the genera involved and have produced only a few outstanding ones; probably the same ratio as occurs with truly outstanding *Neoregelia* hybrids. *xAnagelia* and *xAnamea* were there for those who want an easy way to produce inedible pineapples. *xNeotanthus* seems to combine the better points of both genera in leaf structure but forget about the flowers. *xCryptbergia* 'Mead' is very common and yet does not have a photo in the 'official' records. Bill Treloar promises to help out! (There is) *xHobenelia* 'Nifty Nev' so called by the quirky humour of John Catlan. Finally we must mention

xNeostropsis 'B-Fire' as it is known in Australia, but it is *xNeostropsis* 'Shadeball' in the USA purely because of laziness of the hybridist concerned.] □

[Editor's Note: Taxonomists restrict the use of the term nothogenus to those bigeneric plants that are naturally found in habitat. Uncle Derek has a point in choosing to use the self-explanatory word bigeneric for all hybrids between two different genera. For most people it doesn't make much sense to use the term nothogenus for 2 naturally occurring bigeneric hybrids and use the word bigeneric for the 49 other man-made crosses between two genera.]

SUBFAMILIES AND GENERA - AN UPDATE

by Herb Plever

Ongoing DNA sequencing work on the *Bromeliaceae* by molecular biologists have produced some interesting revisions in the scheme for the family. We now have 8 subfamilies: *Pitcairnioideae*, *Bromelioideae*, *Tillandsioideae*, *Puyoideae*, *Navioideae*, *Hechtioideae*, *Lindmanioideae* and *Brochinioideae*.

The new 2010 Alphabetical List of Bromeliad Binomials compiled by Harry Luther (before he left the U.S. for Singapore) was published just in time for the World Conference in New Orleans. In the past it had been published by BSI, but from what I have been told Harry's request for \$1,000 for printing and binding costs was refused, so the Sarasota Bromeliad Society and Marie Selby Botanical Gardens advanced the funds, had it edited by Larry Rabinowitz and Bruce K. Holst and published it. Those organizations will likely make a good profit on the booklet.

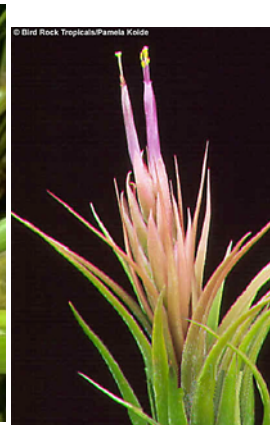
The List is printed in a much improved form with genera and their species listed in 2 columns so that the booklet has fewer pages. At the back there is appended a 3½ page listing of formerly recognized species that have been placed into synonymy with existing species. The more recently named species loses its identity to the same plant that had a prior description. For example



***Guzmania squarrosa*, now
is *Guzmania gloriosa***

Cryptanthus bromelioides var. *tricolor* is now *C. osiris*; *Guzmania squarrosa* is now *G. gloriosa*; *Tillandsia abdita* is now *T. bradeana*; *Tillandsia erubescens* var. *arroyoensis* is now *T. arroyoensis*; *Tillandsia ionantha* var. *scaposa* is now *T. scaposa*. In addition, a genus called *Viridantha*, previously recognized only by Mexican taxonomists, has now been officially merged into *Tillandsia*. (This synonymy list includes corrections that had already been acknowledged by Harry Luther in Binomial Lists since 2006 or earlier.)

A page called Bromeliads by the Numbers indicates there are now 58 recognized genera, 2 nothogenera and 3248 species. It has a typographical error: an "x" denoting a nothogenus has been placed before genus *Neoregelia* instead of nothogenus *Nidureglia*. *Tillandsia* has the most species, 626, and there are more than 400 registered *Tillandsia* cultivars. Contrast that



***Tillandsia scaposa*
(photo by Pam Koide)**

with *Neoregelia*, which is credited with only 113 species, but is the most widely grown genus with close to 4,000 Neo cultivars! This is also the picture for genus *Cryptanthus*. It has only 67 species and about 450 recognized cultivars.

Other genera with many species are *Aechmea* (260), *Dyckia* (141), *Guzmania* (210), *Navia* (93), *Pitcairnia* (336), *Puya* (219) and *Vriesea* (266).

Some genera have only one or a few species: *Acanthostachys*, *Androlepis*, *Cottendorfia*, *Disteganthus*, *Eduandrea*, *Fascicularia*, *Lapa*, *Neoglazjovia*, *Ochagavia*, *Pseudoaechmea*, *Pseudoananas*, *Sequencia* and *Ursulaea*.

To obtain the List of Bromeliad Binomials, send a \$20.00 check payable to Selby Gardens BIC to Bruce K. Holst, Director of Plant Collections, Marie Selby Botanical Gardens, 811 S. Palm Avenue, Sarasota, Florida 34236.

MORE ON IDENTIFICATION

When *Tillandsia ehlersiana* was described as a species, some questions were raised that it wasn't sufficiently distinguishable from *T. seleriana* to justify separate species status. I thought again of this issue when I saw the gorgeous, big specimen of *T. ehlersiana* that was entered in the judged show in New Orleans. I venture to second guess the judges and say it deserved to have been on the prize table. *T. ehlersiana* was described by Prof. Werner Rauh, the noted taxonomist and botanist. He distinguished *ehlersiana* from *seleriana* because among other things: 1- its trichome covering was very dense as distinct from the sparse indument that does not mask the green leaves of *seleriana*. 2- *seleriana*'s leaf blades are strict and often secund, and never recurved down as is *ehlersiana*'s. 3- *ehlersiana* has so short a scape it barely reaches above the leaves whereas *seleriana*'s scape puts its flowers well above the leaves. (If a new species of *Tillandsia* was to be named to honor a person, Renate Ehlers clearly was the most deserving first choice.)

The issue brings to mind the larger issues involved in recent, efforts to revise the taxonomy of the *Bromeliaceae*. As Elton Leme, one of the leaders of the new thrust put it, he aims to reach a more natural classification with morphological analysis also based on the study of live plants in habitat and not only on dried, pressed material. Now, in addition to physical analysis, we have the important work in DNA sequencing that will make major revisions in the scheme for *Bromeliaceae*.

Years ago when I was privileged to watch Lyman Smith at work in his office in the NY Botanical Gardens we discussed the disparity between my observations with live plants I was flowering and his conclusions based on pressed specimens. Lyman, a true scientist, agreed that it would help if taxonomists had greater access to live material, so they could compare it with their dried specimens. (I couldn't persuade him to change his inclusion of *T. pedicellata* into synonymy with *T. bryoides* until I sent him a flowering specimen of *pedicellata* with its dark violet, open petals, but that was after the Monograph was written.) HP



Tillandsia seleriana



Tillandsia ehlersiana (photo by Pam Koide)

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