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CONTENTS

p. 106

p. 114

p. 134

Covers

Front— *Tillandsia kautskyi* an exquisite small tillandsia first discovered in July 1978 by the late Roberto Kautsky, after whom it was named. Photo by Andrew Flower.

Back— *Tillandsia fasciculata* in habitat near Fortuna, Costa Rica. Photo by Peter Tristram (see article on page 133)

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Editorial

BSI Board Meeting, June 2010

Jay Thurrott

1. It was reported that the much anticipated, revised Judges Handbook draft copy had been delivered to the President for review. When final minor changes are completed, copies will be provided to all current BSI judges.

2. Little success was noted in siting the next World Conference outside of the U.S. The difficulty relates to the lack of affiliated societies (a requirement in the By Laws) in countries that have indicated an interest in hosting this event.

3. An offer to host the 2012 World Conference received from the Florida Council of Bromeliad Societies was approved, subject to the group establishing affiliation with BSI (currently the member societies are affiliated, but the Council is not).

4. Discussion was presented on work currently underway to develop a proposal for reorganizing the current U.S. regions to reflect a more equitable distribution of societies and members. More work will be done before a proposal is submitted to the Board on this.

5. A motion was passed in support of the Cultivar Registrar's current work with the intent to make the Registry available on the BSI website as soon as is practical.

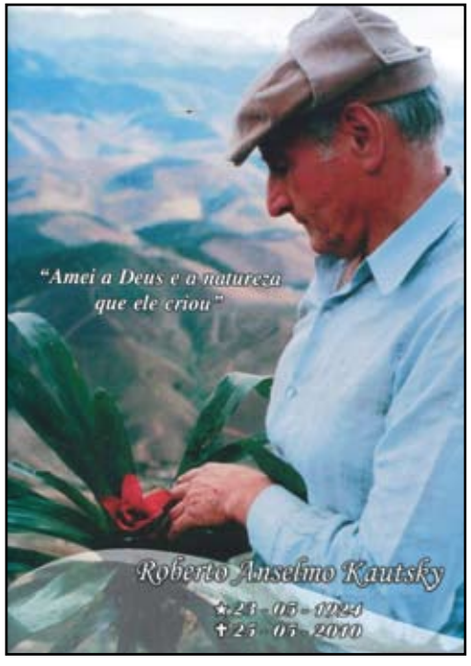
6. Regarding the Bromeliad Identification Center at Selby Gardens, a committee was formed of the president, the treasurer and one director. This group is to meet with Selby Gardens staff as soon as possible to consider establishing a formal relationship with a goal of clearly defining duties and obligations of both the BSI and Selby Gardens.

And I almost forgot – there was an election of officers and I seem to be the new president. Whether this is an honor or a penal sentence remains to be seen, but I tend to be optimistic about such things and will give it my best shot!

BSI Honorary Trustee, Roberto Kautsky Dies at 86

Sadly, we have to report the death of Brazil's Roberto A. Kautsky, elected an honorary trustee of the BSI in May, 1986. Mr Kautsky had a deep love of nature, and many years ago bought 300,000 square meters of virgin forest (known as "Kautsky's Mountain) on which, by 1986, he had relocated more than 100,000 plants over a 15 year period.

We received the following note from his friend Joel Guilleme Velten (see over):



"I am Roberto Kautsky's close friend and I am very sorry to tell you that my dear friend passed away last May 25 at the age 0f 86. He was the son of Mr Roberto Carlos Kautsky and Mrs Eliza Kautskyi and he had two sons Roberto Kautsky Jr. and Antonio Kautsky...

His funeral was in Domingos Marcos on May 26 at 4pm in the Lutheran Cemetary. Many people went there to say bye to this very important man who loved the flowers and mostly the nature.

On his grave he himself wrote this saying: "I loved God and the nature who he created."

The plant on our cover, *Tillandsia kautskyi*, was named for Roberto Kautsky.

In this issue

The Scientific section has a finely detailed study by Leme and Luther of the taxonomic histrory of *Wittrockia*, and transfers *Canistrum flavipetalum* to that genus. Next is an updated study of the Peruvian *Puya mima* by Moema Cano Flores & Rachel Schmidt Jabaily.

In Cultivation, we lead with a colourful article on the public garden, featuring bromeliads, developed by the Northland Bromeliad Group in an old Quarry near Whangarei, New Zealand. In NZ there is another quarry garden developed earlier by the Tauranga Bromeliad Group, as well as a section in the Auckland public gardens maintained by the Bromeliad Society of New Zealand members. This is a fine way to keep bromeliads in the public eye, and is highly recommended to other bromeliad groups and societies. Derek Butcher finishes off by introducing a new cultivar, Tillandsia 'Silver Candelabra'.

The general interest section has an adventure story looking for bromeliads in Costa Rica, "Searching for Miss Fortuna, 2010 Style" by Peter Tristram.

Notes on our Previous Issue 60(2)

Eric Gouda has advised that in the article on page 87. The Wanton *Tillandsia complanata*, in figure 3 the plant is *T.* x *complachroma,* and fig 5 is probably a *T. complanata* with *T. tovarensis* that is growing in that area too.

On page 91, second line down , the "x" was omitted from "*T.* x *complachroma*".

Call For Nominations for BSI Officers

Dr Larry Giroux

Periodically as determined by the BSI Bylaws, the BSI Nominations Chair asks BSI members to nominate BSI Officers to service on the BSI Board of Directors. If more than one candidate is nominated for a position, the BSI Board of Directors (which consists of the officers and directors of the society) vote on the nominees. Below is the list of BSI Officers' positions up for election or re-election. Instructions regarding who can be nominated and how to nominate follow.

Treasurer for the 2011-2013 term
Membership Secretary for the 2011-2013 term
BSI Webmaster for the 2011-2013 term
BSI Journal Editor for the 2011-2013 term

Any new nominees for the Treasurer, Membership Secretary and BSI Webmaster positions will be running against the incumbents. The current BSI Journal Editor is not standing for re-election. The names of current Officers can be found on the inside back page of this Journal.

The following are excerpts from the BSI Bylaws concerning BSI Officers and their election.

1. Enumeration. The officers of this society shall be the President, the immediate Past President, the Vice-President, the Editor, the Membership Secretary, the Secretary, Webmaster and the Treasurer. They shall be elected by a majority vote of the Board of Directors (the board) at its annual meeting or as provided otherwise.

2. Eligibility requirements. Each candidate for office shall be a member in good standing of BSI and agree to remain in good standing during tenure if elected. Candidates for the offices of President and Vice-President shall have served at least one term as director.

3. Nomination and election.

a) The chairman of the Nominations Committee shall ascertain the individual membership status of the candidates from the membership secretary and make the nominations to the board 30 days before the annual meeting of the board. Any director may nominate from the floor at that meeting.

b) Elections shall be by ballot. If there is only one nominee for an office, a voice vote shall suffice.

4. Terms of office.

a) The President and Vice-President shall serve three years or until their successors are elected. Their tenures shall begin at the conclusion of the meeting at which elected. Neither may serve more than two terms in these offices.

b) The immediate Past President shall serve for a one-year term.

c) Other officers shall serve two year terms or until relieved by the board of their duties either at their own request or by the board for cause.

Who may nominate?

Any voting member of the BSI. Who may be nominated? A nominee must have the following credentials: (1) be a voting member of BSI and agree to remain in good standing during tenure if elected. (2) for President or Vice-President--have served a least one term as a director. (3) agree to being nominated; and (4) agree to serve as an Officer if elected and to remain a member of the BSI for the duration of his/her term.

Procedure for nominating:

(1) obtain the consent of the prospective nominee and verify compliance with the qualification criteria;

(2) mail or email nominations to the chairman of the Nominations Committee between January 1, 2011 and March 15, 2011, inclusive. (Nominations must reach the Chair of the Nominations Committee by March 18, 2011.) Nominations by telephone will be accepted through March 15, 2011, but must be confirmed in writing within two weeks;

(3) supply with each nomination the full name, address and telephone number and e-mail address, if applicable, of the nominee, the position for which the nomination is being made, the local society affiliation, and a brief "bromeliad biography" of the nominee.

Please mail nominations to:

Larry Giroux, BSI Nominations Chair
3836 Hidden Acres Circle N
North Fort Myers, Florida 33903 USA
239-997-2237/ 239-850-4048 or email to: nominations@bsi.org or DrLarry@comcast.net

Transfering *Canistrum flavipetalum* Wand. to Wittrockia

Elton M. C. Leme[1] & Harry E. Luther[2]. photos by E.M.C. Leme

Figure 1 – Habit of *Wittrockia flavipetala* (Leme # 3824) that flowered in cultivation.

Taxonomical history

The genus *Wittrockia* was established by Lindman (1891) on the basis of a single specimen, *W. superba* Lindm. The concept of the genus has undergone a considerable change to arrive at the parameters proposed by Leme (1997; 1998). Lindman (1891) originally associated it to the genus *Nidularium* Lem., s. lato, and with the genus *Bromelia* L., using the petals appendages as a distinguishing character. The author also considered *Wittrockia* as intermediate to *Nidularium* and *Neoregelia* L. B. Sm. [then *Regelia* (Lem) Lindm.], because it didn't have the branched inflorescence with the showy primary bracts of the former nor the simple inflorescence of the latter.

1 Herbarium Bradeanum, Rio de Janeiro, Brazil; leme@tjrj.jus.br.
2 Gardens by the Bay, National Parks Board, Singapure; harry_luther@nparks.gov.sg.

Mez (1894) reduced *Wittrockia* to the rank of subgenus in *Canistrum* E. Morren (= subgenus *Nidulariopsis* Mez). As a subgenus, the circumscription of *Wittrockia* was expanded to include *Canistrum amazonicum* (Baker) Mez [= *Nidularium amazonicum* (Baker) Linden & E. Morren ex Lindm.]. According to Mez (1896; 1934), the subgenus *Wittrockia* was then distinguished from the subgenus *Canistrum* (= subgenus *Eucanistrum* Mez) by its high-connate petals versus the free petals in the latter.

Smith (1945) restored the generic status of *Wittrockia*, arguing that the petals partially connate at their base were enough to distinguish it from *Canistrum* and *Aechmea* subgen. *Ortgiesia* (Regel) Mez. The petal appendages were used in his key to separate *Wittrockia* from *Nidularium* and *Neoregelia*. The concept of the genus was once more expanded by Smith (1952; 1955; 1969) by means of the inclusion of some species currently included in *Nidularium* and *Neoregelia* [e. g., *Nidularium minutum* Mez, N. azureum (L. B. Sm.) Leme, *Neoregelia bragarum* (E. Pereira & L. B. Sm) Leme]. In their monograph, Smith & Downs (1979) did not modify the conceptual limits of the genus.

The concept of *Wittrockia* was expanded further by Leme (1989; 1991a; 1991b; 1992; 1995) by the inclusion of species nowadays positioned in *Aechmea*, *Neoregelia* and *Nidularium*. Based on such disparate taxonomic elements, its circumscription became very confusing, based as it was solely on the presence of petal appendages and basal petal concrescence. Such a chaotic conglomeration of elements from *Aechmea*, *Neoregelia* and *Nidularium* could only be compared to Baker's (1889) concept of *Karatas* Plumier.

When revising the genera of the so called "nidularioid complex", composed by *Canistrum*, *Canistropsis* (Mez) Leme, *Edmundoa* Leme, *Neoregelia*, *Nidularium* and *Wittrockia*), Leme (1997) introduced arguments in favor of the correlation of multiple traits, based on morphological, anatomical, palynological, biogeographic and ecological data, to retrieve the concept of Wittrockia in order to decrease its unduly artificial nature. The isolated individual use of some diagnostic elements (e.g., nidular inflorescence, flower pedicels, petal concrescence, petal appendages) was assigned a relative value, both in weight and importance (Leme, 1998; 2000). This allowed the recognition of the *W. superba* Lindm., *W. cyathiformis* (Vell.) Leme and *W. gigantea* (Baker) Leme as the "core" taxa of the genus (the last two historically assigned to *Canistrum*), as well as two other more peripheral taxa, *W. spiralipetala* and *W. tenuisepala* (Leme) Leme. Species of *Wittrockia* clearly related to *Aechmea*, *Neoregelia* and *Nidularium* were excluded from the genus and recombined. Later on, *W. paulistana* Leme was added to the "core" taxa of the genus (Leme, 2000).

Wittrockia, in a strict sense, as conceived by Leme (1997) became a genus comprising medium- to large-sized species, being anatomically and morphologically close related to *Edmundoa*, *Canistropsis* and *Neoregelia*. It is interesting to mention that in the phylogeny of Bromelioideae inferred from DNA data, the "nidularioid clade", based on *Edmundoa lindenii* (Regel) Leme, *Neoregelia* spp., *Nidularium procerum* Lindm., and W.

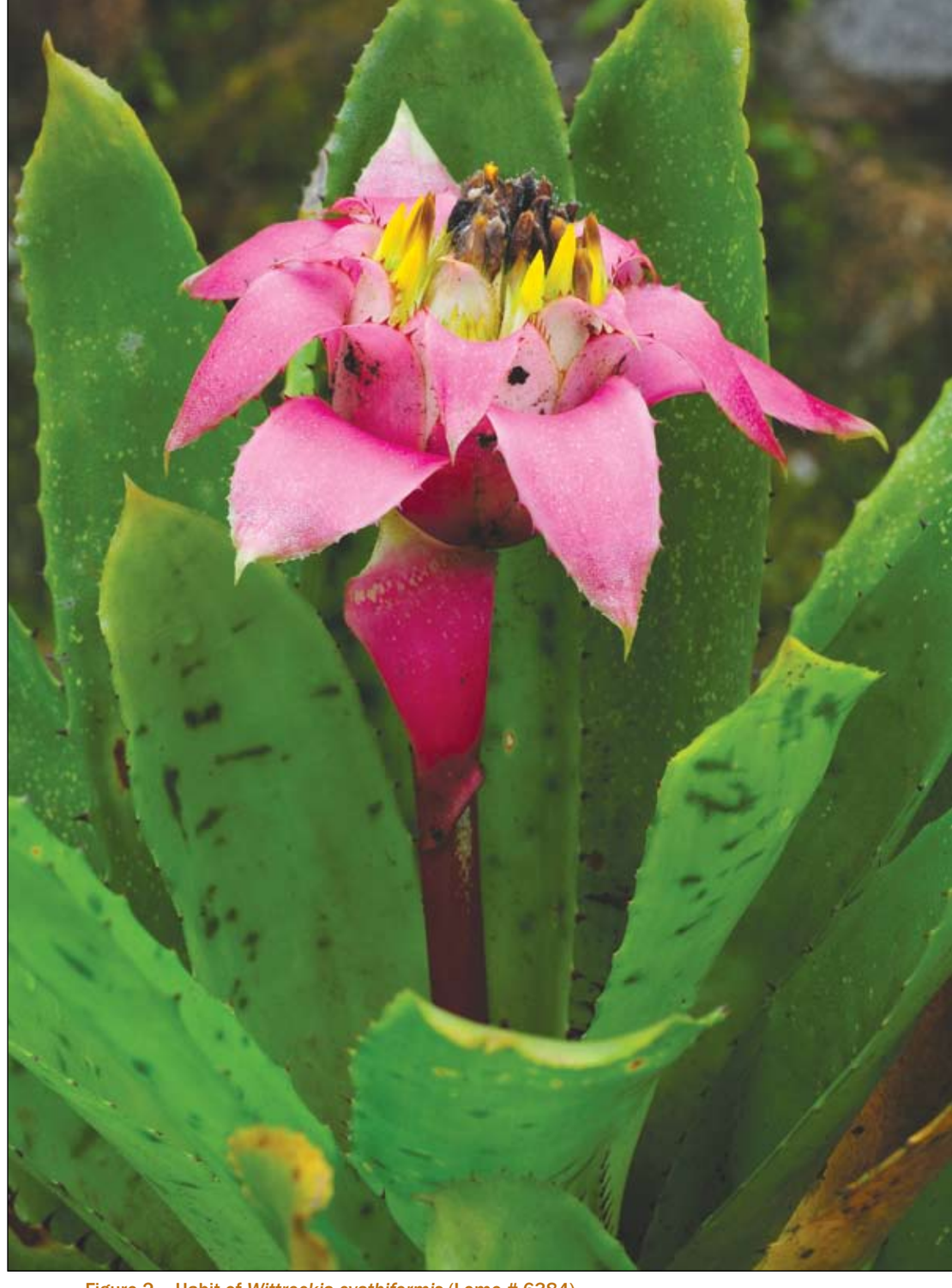


Figure 2 – Habit of *Wittrockia cyathiformis* (Leme # 6384).

superba, is statisticaly highly supported (Schulte & Zizka, 2008; Schulte et al., 2009). A similar result for the nidularioid lineage (i.e. *Edmundoa*, *Neoregelia*, *Nidularium*, and *Wittrockia*) was obtained by Sass & Specht (2010) on the basis of chloroplast, nuclear ribosomal and low copy nuclear DNA. Additionally, the results obtained by these authors segregated *Canistrum aurantiacum* E. Morren and *C. fosterianum* L. B. Sm. from the nidularioid lineage and associated them to *Aechmea* s.l.

Figure 3 – Close up of the inflorescence of *Wittrockia cyathiformis* (Leme # 3189).

Figure 4 – *Wittrockia superba* (Leme # 1212), the type species of the genus *Wittrockia*.

In relation to leaf blade anatomy, *Wittrockia superba*, *W. cyathiformis* and *W. gigantea* are closely related to *Edmundoa lindenii* and *E. perplexa* (L. B. Sm.) Leme, *Neoregelia brownii* Leme and *N. rubrovittata* Leme (i.e., not related to *Aechmea*) because of the presence of sheath extensions formed by thick-walled cells, associated with vascular bundles. In the studied species of *Canistrum* (*C. aurantiacum*, *C. camacaense* Martinelli & Leme, *C. montanum* Leme and *C. triangulare* L. B. Sm. & Reitz), which are anatomically related to Aechmea, the leaf blades have a predominantly spongy mesophyll, and fibers are not associated with the vascular bundle (Sajo et al. 1998).

According to Halbritter & Till (1998), the pollen of the "core" *Wittrockia* is diporate with small porous and reticulate exines, are remarkable in that the lumina are filled in part with a very persistent kind of pollen kit in *W. cyathiformis* and *W. gigantea*. On the other hand, these authors highlighted the heterogenous pollen in *Canistrum*, mainly in the type species *C. aurantiacum*, which is polyporate, and in *C. auratum* Leme (subgenus *Cucullatanthus* Leme) having large pores. The palynological features of the first species are in fact more closely allied to the "Gravisia complex" of *Aechmea* (unpl. data), while the latter species belongs to the complex headed by *Aechmea fosteriana*, the "Cucullatanthus complex", which species are nowadays spreaded in three genera (i.e., *Aechmea*, *Canistrum* and *Quesnelia*; unpl. data) and were listed by Leme & Siqueira-Filho (2006). Recently, preliminary results based on DNA analysis gave a high support to the Cucullatanthus clade, taking into consideration *C. fosterianum* and *Quesnelia edmundoi* L. B. Sm. (Schulte & Zizka, 2008; Schulte et al., 2009) and *C. fosterianum* and *Aechmea correia-araujoi* E. Pereira & Moutinho (Sass & Specht, 2010).

Besides leaf blades anatomy and pollen differences, Leme (1997; 1998) distinguished *Wittrockia* s. str. from *Canistrum* by its comparatively larger flowers (45-84 mm vs. 25-50 mm long), the longer sepals [(12-) 25-45 mm vs. 10-20 (-24) mm long] which are subsymmetrical, lacking a pronounced lateral wing, with apex often attenuate-caudate and not pungent (vs. strongly asymmetrical with a well developed lateral wing equaling to exceeding the distal portion of the midnerve, with mucronulate to spinescent apex) and usually ecarinate (vs. the posterior ones usually alate-carinate with keels decurrent on the ovary). According to the inferred evolution of sepals symmetry based on DNA analysis, symmetric sepals are ancestral within subfamily, and in the case of the *Edmundoa*, *Nidularium* and *Wittrockia* of the Nidularioid clade, its symmetrical sepals are reversals stemed from common ancestry (Schulte et al., 2009).

In addition to sepal characters, *Wittrockia* s. str. also differs from *Canistrum* by the narrowly ovate to obovate or lanceolate petals (vs. sublinear), which are comparatively longer and broader [25-46 x (6-) 8-15 mm vs. 15-30 x 3-6 mm], anthers usually dorsifixed near the base (vs. dorsifixed near the middle), epigynous tube often lacking (vs. distinct, 1-4 mm long), and by the white, orange-yellow or red fruits (vs. with shades of purple, which is common in Aechmea-related taxa).

The geographical distribution of *Wittrokia* s. str. is concentrated in the southern-southeastern Brazilian states of Santa Catarina to Rio de Janeiro, and further inland it occurs in the state of Minas Gerais, and a single species in the northeastern state of Bahia. In contrast, *Canistrum* predominates in the northeastern states, from Bahia to Pernambuco, with the exception of the state of Espírito Santo, in southeastern Brazil, where a single species can be found. That distinct pattern of geographical distribution is important because, according to Sass & Specht (2010), the apparently homoplastic morphological characters used to assign species to genera or subgenera may be useful taxonomically when geography is also taken into account.

Finally, the segregation of *Wittrockia* from *Canistrum* in the circumscription adopted by Leme (1997;1998) was well supported by cladistic analysis based mostly on morphological selected characters (Brown & Leme, 2000).

Recently, the Bromeliaceae of the state of São Paulo was revised in volume 5 of Flora Fanerogâmica do Estado de São Paulo (Wanderley & Martins, 2007) adopting broad circumscription concepts for the genera of the Nidularioid complex in contrary to the mainstream views of the Bromeliaceae research community (Brown et al., 2008). However, this monograph did not presented any tangible new data and explicit scientific data based justification to explain the maintenance of older arguably artificial generic concepts (e.g., Smith & Downs, 1979) over more recent, data supported monographic revisions. One of the examples is the rejection of *Edmundoa* and *Wittrockia* as distinct genera from *Canistrum* on the basis of the vague justification that variability of diagnostic characteristics of the involved taxa is continuous (Wanderley et al., 2007), which is not rooted in any newly produced scientific data nor inspired in

Figure 5- ***Wittrockia tenuisepala*** (type descendant), the smaller species of the genus.

Figure 6- An atypical dark purple-bracteate specimen of *Wittrockia gigantea* (A. Seidel s. n.), which contrasts with the regular dark red-bracteate pattern of the species.

any more reasonable phylogenetic hypothesis, and just contributed to nomenclatural instability by means of proposed superfluous new binomials.

A more recent consequence of this ideological-based position observed in part in the "Flora de São Paulo" treatment was the publication of a new species, *Canistrum flavipetalum* Wand., which is clearly a typical member of the genus *Wittrockia* according to Leme (1997; 1998), being closely morphologically related to *W. cyathiformis*, as correctly indicated in the protologue. It is interesting to mention that in the protologue, Wanderley (2008) stressed that the adopted concept of *Canistrum*, including *Edmundoa* and *Wittrockia* as synonyms, was "detailed discussed" in Wanderley et al. (2007). However, consulting the reference cited, the only justification found is the vague statement that the the variability of diagnostic characteristics is continuous.

Based on all arguments presented above, this newly described taxon does not have any relationship with *Canistrum*, neither with the typical subgenus, nor with the subgenus *Cucullatanthus*. So, a new combination is necessary and implemented here.

Taxonomic Treatment

Wittrockia flavipetala (Wand.) Leme & H. Luther, comb. nov.

Basionym: *Canistrum flavipetalum* Wand., Hoehnea 35 (4): 537, fig. 1, 2. 2008. Type: Brazil, Bahia, Abaíra, Tijuquinho, 13°16'S 41°54'W, 1,700-1,800 m elev., 26 Febr. 1992, P. T. Sano & L. Laessoe H-52351 (Holotype, SPF, n.v.; Isotype SP, n.v.).

Plant ephiphyte or terrestrial, propagating by short basal shoots. ***Leaves*** ca. 20 in number, subcoriacous, suberect-arcuate, forming a broad funnilform rosette; ***sheaths*** broadly elliptic, 13-14 x 10-11 cm, greenish toward the apex, subdensely brown lepidote on both sides, strongly nerved with conspicuously castaneous nerves, coarsely spinose at extreme apex; ***blades*** sublinear-lanceolate, narrowed toward the base, 25-60 x 5-6 cm, sparsely and inconspicuously white-lepidote to glabrescent, green to reddish at apex and along the apical margins, with sparse and irregular darker green spots, apex acute and distinctly apiculate, apiculus 3-4 mm long, rigid, margins densely to subdensely spinose, spines subspreading, triangular, castaneous toward the apex, the basal ones ca. 3 mm long, the apical ones 1.5-2 mm long. ***Scape*** 23-30 cm long, ca. 0.8 cm in diameter, green, glabrescent, rugulose, mostly naked; ***scape bracts*** one near the base and few involucrate ones at apex, suboblong, acuminate, suberect to spreading toward the apex, green or sometimes slightly reddish at extreme apex and along the apical margins, inconspicuously and sparsely white-lepidote toward the apex, the upper ones exceeding the petals, ca. 50-80 x 30 mm, densely and coarsely spinose, spines pale castaneous, 1-2 mm long. ***Inflorescence*** compound, subumbellate, with a narrow obconic base and a stellate apex of spreading involucral and primary bracts, subtripinnate except for the simple central portion, distinctly elevated above the rosette, ca. 5 cm long, 8-10 cm in diameter at apex (including the primary bracts); primary bracts

resembling the involucral bracts, but smaller, the outer ones oblong, apex broadly acute and distinctly apiculate, erect at base to spreading-recurved toward the apex, ca. 40 x 10 mm (the inner ones much reduced), about equalling the sepals length, inconspicuously and sparsely white-lanate at apex to glabrous, green, densely spinose, spines irregularly curved, ca. 1 mm long; fascicles ca. 5 in number, ca. 40 x 17 mm (excluding the petals), subflabellate, subcomplanate, ca. 3-flowered, inconspicuously stipitate, with few sterile floral bracts; ***floral bracts*** narrowly sublinear-lanceolate, apex acuminate, 27-32 x 3-5 mm, irregularly spinulose to subentire, obtusely carinate, finely nerved, greenish toward the apex, inconspicuously and sparsely white-lanate at apex to glabrous, about equalling 1/2 to 2/3 of the sepals length. ***Flowers*** ca. 45 mm long, subsessile, odorless; ***sepals*** oblong-lanceolate, subsymmetrical, apex acuminate to apiculate-caudate, not rigid, 12-15 x 5 mm, free, inconspicuously and sparsely white-lanate to glabrous, green, obtusely if at all carinate toward the base; ***petals*** narrowly elliptic-subobovate, ca. 25 x 8 mm long, free, membranous, apex emmarginate, the apical 1/3 yellow, the basal 2/3 whitish, erect except for the spreading-recurved apex at anthesis, bearing at base 2 appendages ca. 3.5 x 1.5 mm, suboblong-lanceolate, subacute, entire or nearly so, without callosities; ***filaments*** ca. 18 mm long, free, subterete; ***anthers*** ca. 5 mm long, base sagittate, apex obtuse, fixed near the base; ***stigma*** conduplicate-spiral, globose, ca. 2.5 in diameter, lobes entire or nearly so; ovary subclavate, trigonous, 17-18 mm long, 6-7 mm in diameter, greenish-white, glabrous; ***epigynous tube*** ca. 1 mm long; placentation from median to apical; ovules many, subcylindrical, obtuse. ***Fruits*** enlarged from the ovary, orange-yellow.

Material examined: Bahia: Chapada Diamantina, Palmeiras, Caeté-Açu, riparian forest, 14 Mar. 1997, J. C. Garcia s. n., cult. E. Leme 3824 (HB); fl. cult. Sept. 1999, E. Leme 3824 (HB).

Additional remarks

Wittrockia flavipetala was first reported by Leme (2000) as an unpublished species in the supplement study of *Wittrockia*. It was not formally described because R. C. Forzza (pers. comm.) stated it was under study by her and M. G. L. Wanderley. So, only a full-page color photo of it and commentaries on its distribution and morphological affinities were then presented, as well as a expanded identification key for the genus.

According to the identification key presented by Leme (2000), *Wittrockia flavipetala* is closely related to *W. cyathiformis*, being distinguished by the shorter scape (23-30 cm vs. 30-55 cm long), involucral bracts and primary bracts green or sometimes reddish at their distal portion (vs. reddish-pink to purplish throughout), shorter primary bracts (ca. 4 cm vs. 7-12 cm long), shorter flowers (ca. 45 mm vs. 55-60 mm long), distinctly shorter sepals (12-15 mm vs. ca. 30 mm long) and by the shorter petals with entire appendages or nearly so (ca. 25 mm vs. ca. 43 mm long; petal appendages denticulate).

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Aechmea* (formerly *Neoregelia*) *aculeatosepala from Amazonian Ecuador. Doesnt like high (or very low) temperatures or dryness.

-Harry E. Luther.

New Localities and Taxonomic Synopsis of *Puya mima* (*Bromeliaceae*), a Charismatic and Important Puya from Central Peru

Noema Cano Flores & Rachel Schmidt Jabaily

Efforts to compile the Flora of Peru (Macbride, 1936; Weberbauer, 1945; Brako & Zarucchi, 1993; Ulloa et al., 2004; León et al., 2006) are ongoing and *Puya mima* L.B.Smith and R.W.Read is one of twenty two Peruvian Puyas known from the type collection only, prior to our recent collecting and taxonomic efforts. In light of recent collections of flowering material from multiple locations in the field, we present an updated species description and additional information about this beautiful Peruvian Puya. The type specimen of *P. mima* was found by P.C. Hutchison in the Department of Cajamarca, Province Jaen near San Felipe in October, 1964 (Figure 1). No vouchers were taken of the plant, but collected seeds were later cultivated in the Desert Collection of the Huntington Botanical Garden, home of the largest living collection of Puya. The type specimens grown from these seeds were made in 1977 and are deposited at the US National Herbarium, Jepson Herbarium, and Huntington Botanical Garden herbarium (HNT 697). The original species description was then published in 1978 by L.B. Smith and R.W. Read in Phytologia. All living accessions of *P. mima* from the original seeds at Huntington had died by 1980, most likely from periodic frosts.

Recent collections of *Puya mima* from the Department of Ancash considerably expand the known geographic range of this species. Puya are particularly diverse in Ancash, home of the majestic Cordilleras Blanca and Negra and Huascaran National Park. *Puya raimondii*, *P. macrura*, and *P. angusta* are common in the vicinity and type-only localities of *P. argentea*, *P. cerrateana*, *P. grandidens*, *P. hutchisonii*, *P. macbridei* ssp. *macbridei* and ssp. *yungayensis*, *P. nigrescens*, *P. rauhii* and *P. tyleriana* also recorded. Much work remains to be done to describe new species and re-circumscribe the taxonomy of other Puya in Ancash.

Puya mima is a very unique Puya in many aspects of its morphology. The inflorescence is simple, glabrous and few flowered, both traits uncommon in Puya (Figure 2). The scape and floral bracts are entire, smooth, thick and slightly inflated. *Puya mima* has large, zygomorphic flowers on the end of a long pedicel, similar to *P. ferruginea* (Ruiz & Pavón) L.B. Smith, a species common throughout the central Andes. However, *P. mima* does not have ferruginous hairs or the white petals characteristic of that species. The petals are a brownish-pink color that changes throughout anthesis (Figure 3). It would be very interesting to determine the pollinator of *P. mima*! The capsules are some of the largest of any Puya species (Figure 4).

Figure 1: *Puya mima* type specimen from Huntington Botanical Garden. Photo by Cody Williams.

Figure 2: *Puya mima* in typical inter-Andean valley habitat, above the town of Caraz, Ancash, Peru. Photo by Rachel Schmidt Jabaily.

The species is common on rocky slopes covered by dry valley vegetation including *Acacia macracantha*, *Schinus molle* and *Caesalpinia spinosa* (Figure 2). Local people of this valley call it "queshque blanco", or the white Puya. The altitudinal range of *Puya mima* is between 1400-2600 m and the current species distribution is from the Department of Ancash to Amazonas. It is not yet known from Dept. La Libertad, but we would expect to find it there as well. One population of *P. mima* was found on an exposed hillside above the town of Caraz in Ancash. The plant was quite common and grew in sympatry with the shorter *P. macrura*. All individuals had just finished flowering and were setting seed in mid-April, 2008. Local people burn this hillside annually as part of the festival of San Juan in June, but this practice may not be detrimental to the plants if they have released their seeds by then and can perpetuate themselves as vegetative ramets.

Recent and ongoing studies of evolutionary relationships within Puya using two types of molecular data (Jabaily & Sytsma, 2010) show that *Puya mima* is one of the most genetically distinctive Puya species, and is often placed in the earliest diverging lineages of the entire genus. This species merits further studies both in the field and the laboratory and highlights the importance of ongoing fieldwork efforts in Peru.

Figure 3a. *Puya mima* flowers close-up. Note that part of the petals have been removed to show stamen coloration. Photo by Noema Cano Flores.

Figure 3b. In May, 2008 a new population was found above the Puchka River in the district of Uco, Prov. Huari, Ancash. Photo by Noema Cano Flores.

Figure 4: *Puya mima capsule*. Photo by Rachel Schmidt Jabaily,

Updated description of *Puya mima* L.B. Smith and R.W. Read:

Plant with many polycarpic ramets, flowering to 2m high. ***Leaves*** numerous per rosette, 5dm long, narrowly triangular, densely covered with scales beneath, becoming glabrous above, margin serrate with slender antrorse red spines, to 7mm long and slightly curved; ***sheaths*** 6cm wide, 3cm tall, lustrous castaneous beneath. ***Scape*** slender, glabrous, erect to 1.2m high, 20mm in diameter, completely covered by scape bracts; ***scape bracts*** to 7cm long, broadly oblong, mucronate, entire, glabrous, light brown, castaneous, slightly inflated, imbricate. ***Inflorescence*** simple, glabrous, to 1.5m; ***floral bracts*** like scape bracts, to 8cm, about equaling pedicels; ***pedicels*** ascending, stout, to 7 cm long, green at anthesis, drying dark brown. ***Flowers*** nutant, lax and secund strongly zygomorphic, emerging as a downcurved hook, petals twist tightly post-anthesis; ***sepals*** to 5.5cm long, broad lanceolate, mucronate, carinate., pale green when immature, dark brown at base when dried; ***petals*** more than twice as long as sepals, pink brown, becoming green at center; filaments, anthers and style with pinkish tinge. ***Pollen*** yellow. ***Capsule*** broadly ovate, to 5cm long, dark brown and lustrous; ***seeds*** alate, nearly triangular, 3-4mm.

Recent collections: Peru. Ancash: Prov. Huaylas: Cerro San Juan, above Caraz, 2594m, 09 02'29"S, 77 48'26"W, common on exposed hillsides, 10 April 2008, R. Jabaily & M. Ames 228 (WIS; USM). Ancash: Prov. Huari: Uco, on the right margin of Puchka river 300 m. before Gargahuayin, 2269m, 09º12´14.4´´ S – 76º57´34.92´´ W, 15 May 2008, N. Cano-Flores & E. Jara-Peña NOE-022 (USM). Ancash: Prov. Yungay: Ranrahirca, Matacoto, 2376m, 18L 0197375 - UTM 8985318, 10 April 2009, N. Cano-

Flores & E. Jara-Peña NOE-078A (USM). Ancash: Prov. Antonio Raimondi: Aczo, in front of Piuroq, 2360m, 9° 13' 0S - 76° 58' 0W, 11 April 2009, N. Cano-Flores & E. Jara-Peña NOE-078B (USM).Ancash: Prov. Pallasca: Pallasca, above the Lacramarca River, 2300m, 08º12´32.2´´ S - 77º56´59.7´´ W, 19 May 2005, A. Cano ACE-15567 (USM). Amazonas: Prov. Bagua: Bagua Grande, Longa Grande. Buenos Aires (Calpón), 1420m, 5° 45' 22S - 78° 26' 28W, 19 May 1989, C. Díaz y J. Campos 3432. Amazonas: Prov. Luya: Camporedondo, between Brasil and Pucho, 1570-1780m, 06º15´10´´ S - 78º 20´7´´ W, 22 June 1999, J. Campos, W. Vargas and J. Sembrera 60843.

The authors met in April 2008 while Rachel Jabaily was on a collecting trip in Peru. We have formed a fruitful international partnership in our studies of Puya. Rachel Jabaily finished her Ph.D. thesis "Systematics and Evolution of Puya (Bromeliaceae)" at the University of Wisconsin-Madison. Over the past several years, she observed and collected Puya throughout the Andes. Noema Cano-Flores completed her thesis "Taxonomic Study of the Bromeliaceae Family in Ancash, Peru" to obtain the title Biologist at the Universidad Nacional Mayor de San Marcos, in Lima, Peru. She currently is pursuing a Masters Degree in Applied Ecology at the Universidad Nacional Agraria La Molina, in Lima, Peru working on the diversity, distribution and conservation status of Peruvian Puya.

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Whangarei Subtropical Quarry Gardens

Erin Titmus. Photos by Colin Symonds.

Figure 1. Entrance to the original hillside garden. Inscription on the stone reads: "The Bromeliad Garden. In collaboration with Northland Bromeliad Group. Bromeliads ~ a walk amongst the jewels of the forest."

If you take the SH1 bypass through Whangarei, New Zealand a large brown tourist sign directs to the "Subtropical Quarry Garden" sited less than a kilometre toward the hills. The remains of the quarry are clearly visible and set the character of the gardens planted among spectacular rock and water features – just the right ingredients to produce a microclimate for subtropicals.

The gardens are a community project created and maintained by volunteers and donations. About 12 years ago members of the Northland Bromeliad Group offered to plant a feature bromeliad garden and were allocated an area on shady hillside beside the rippling stream. The group underplanted among the trees and created walking tracks to allow access for the public to enjoy a wide range of bromeliad species.

Figure 2. *Neoregelia johannis* grouping.

Figure 3. In the ponga dell.

Figure 4. New group plantings in the dell area.

Figure 5. New group plantings in the dell area.

Figure 6.*Quarry remains set the scene.*

Figure 7.Golden *Aechmea recurvata* In the ponga dell.

The success of this area of bromeliad planting led to the group being offered a new area to develop about five years ago. This is the ponga dell: a flatter area either side of a smaller stream with sunny beds and easy access for all.

Today, Freda Nash, along with Iris and Colin Symonds, remain the stalwart volunteers who meet one day each week to work in the gardens. They are revamping both the bromeliad garden areas by planting the better species and varieties of bromeliad in groups for greater effect. Standout groupings include Neoregelia johannis at the hillside entrance contrasted in the forefront by Aechmea recurvata that has turned bright yellow in a recent drought.

Recently, raised rock beds have been built around specimen chorisia trees near the original garden and the group has underplanted these with bulk broms too. If you are pressed for time you can walk a short loop - over the bridge by the car park to reach the dell, along the low road to the ford to take in the chorisia tree beds on your left and then cross on huge stepping stones to reach the hillside bromeliad garden. You can return downhill on the high road past the camelia walk.

If you visit the website http://www.whangareiquarrygardens.org.nz you can see many other feature gardens to whet your appetite for more detail. A stunning new feature throughout the site is the building of gabion walls made from very large netting boxes filled with rocks.

So, if you have never visited the Quarry Gardens, or it has been a while, then next time you pass through plan to take your driving break (at least) in this quiet haven.

Tillandsia 'Silver Candelabra'

Derek Butcher.

This started about 10 years ago when Mick Romanowski talked about this variegated *Tillandsia viridiflora* he had that flowered with a branched inflorescence and not like the single inflorescence of his 'normal' *T. viridiflora*. I assured him not to worry because the description in Smith & Downs said the inflorescence could be either simple or branched.

In 2007 I heard rumblings from Renate Ehlers about this branched plant she had found which seemed to be a species in its own right and she even got the Mexicans to agree that it was the long lost *T. macropetala* and that the name should be resurrected from synonymity under *T. viridiflora*. This had me checking the old records and this is what I came up with:

"*Tillandsia macropetala* Wawra, Wiener III. Gart. 12: 241, Fig. 50. 1887. Type. Vienna Hortus ex E. Morren s n (n v). Identified by description and illustration.

A magnificent plant 1½ metres high, formed by a rosette of leaves, around the base of the shaft virtually 1 metre in diameter; its massive of wide pale red sheaths unite in an oval bulb; its lanceolate leaf blades spreading in a dainty bow, as you look downwards; they taper to a fine tip, a lively green, matt, both sides about the same colour and with faint darker stains and markings. The innermost leaves erect, are smaller and narrower, and merge into the scape bracts above.

The Inflorescence is very long and, very poorly branched Panicle; the Panicle scape is strictly erect, as thick as your thumb and covered over with bracts; the lowermost bracts are leaf-like, the upper ones quickly becoming shorter to about 4 cm long and oblong, keeps the colour of the leaves until the top which is brownish on the outside; they nestles narrowly on the scape, however the acuminate tip is spreading giving the stem a quite rough look. The bracts are very dense at the lower half and imbricate, then they move apart more, so that the scape remains uncovered to the node, at the same time they become thinner and lanceolate; the uppermost are appressed to the stem.

The branches, with our plant three at number, are almost at right angles where they branch off, bending soon upward, shorter than the top spike, always simple and with a primary bract similar to the scape bracts but somewhat wider, and solidly appressed to the branch. The flowers are densely distichously arranged on the branches, but clearly move apart after anthesis. The floral bracts are similar to the scape bracts, only they are rounder and a little bigger than these; the lowermost are sterile. The flowers are sessile, which with the floral bract are joined on a short stalk.

Figure 1 *Tillandsia* 'Silver Candelabra.' Photo by Peter Tristram.

Figure 2 *Tillandsia* 'Silver Candelabra.' Photo by Peter Tristram.

The calyx is a rounded stem and exactly as long as the bract but appears about as long as the exserted stem. Sepals are pale green, only at the outer tip are some brownish and hardly marked.

The pale yellow petals overhang (to my knowledge) those of all other Tillandsias and Vrieseas, they become 12 cm long; the lower ones are smaller, in the calyx half they are very narrow and the edges are imbricate, and form with the sepals a spiralling tube; the upper larger half is similarly wider so that they become fully 2cm wide below the rounded off tip. The petals are far apart and after anthesis hang laxly downwards; they are delicate and, (in subdued light) many nerved the nerves run parallel, bending downwards towards and disappearing near the petal edge, without anastomosis. Nectaries missing at the base.

The filaments straight, prominent, quite free, and about 2 cm longer than the corolla. The anthers are long, very narrow some over 1cm, (pollen gold-yellow), blunt at both ends, attached in its lower third, then split; lying near the fold.

The oblong smooth, with a slimy mass of outercoating Ovary, tapering into the threadlike style above. This is stronger than the filaments, and the tips are bent downwards, blunt triangular and exceeding the filament by about 2cm, therefore 16 cm long. The leaflike wide stigma lobes are lanceolate, blunt, green and spiral. The linear placenta have many rows, narrow short stemmed, of short stringed seeds.

Habitat: Mexico.

The illustration of this plant (larger in real life), with a leaf and a flower came to me from Liege from my unforgettable friend, the highly regarded botanical and particularly *Bromeliaceae* expert Professor Morren, a few days after his passing away. Morren seems to have shown great interest in the solution to the problem as to whether this was a new species because of its unique vegetative organs; it was not for him to experience the development of the flower. The expectation of Morren's was amply justified. The plant proved to be a new species, which is mainly based on the very long petals from the other Tillandsias (and Vrieseas). But it shows another peculiarity; our plant has completely the habit of a Vriesea but lacks the honey-scales at the base of the petals. The existence of these scales in Vriesea forms the only decisive, because the flower is different to Tillandsia; for the time being I believe this is a new species and name it *Tillandsia macropetala* because of its very long petals, after deciding to leave the proof as to whether it was a Vriesea or Tillandsia until later. I can only say that so far I cannot decide categorically that honey-scales constitute a Vriesea. Bentham and Hoocker (gene.) admittedly put no big weight on the same and unify both genera under Tillandsia. The entirely different look of that to Vriesea does not appear to justify such an amalgamation in the manner paid to Tillandsia without dividing a natural group. It remains to be seen whether we look for a new difference, whether in the flower or fruit, to take notice of the vegetative organs, incidentally where I had very little material to work with - the examination could be planned only on one single, wilted flower - that maybe tiny scales are the answer."

Translation by Derek Butcher.

So we now know what the non-variegated form looks like and this is the one that will eventually published because the writers are only interested in this plant found in the wild. Remember too that when Reed S. Beaman and Walter S. Judd reviewed the species in Brittonia 48(1): 1-19. 1996 no mention was made of the variegated variety. Taxonomists try to stay clear of variegated plants because they rarely reproduce in the wild from seed. Their reproduction is asexual and there is no one in the wild to move offsets around. Only in cultivation does variegation get selected from offsets, improved on, and circulated.

What about the *T. viridiflora* var. *variegata* which was described as:

Tillandsia viridiflora (Beer) Baker, var. variegata W. Seaborn, J Brom Soc 29 : 182 . 1979

A var. viridiflora foliis variegatis differt.

Type: Cultivated W. Seaborn s n (US).

In cultivation this plant picks up a dark red diffusion. The plant was found in the Jalapa, Vera Cruz, Mexico area, 1968.

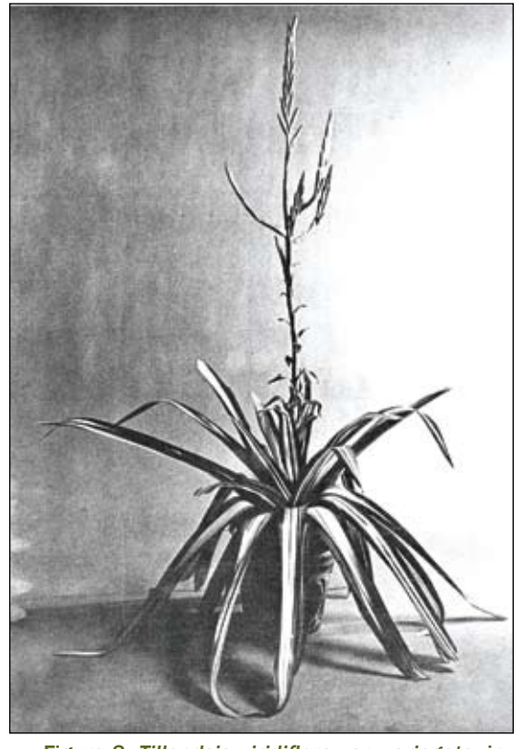

Figure 3 .*Tillandsia viridiflora* var. *variegata*, in J. Bromeliad Soc. 51(4) p. 51.Photo by Wray.

Figure 4. *Tillandsia macropetala* Wawra, Wiener Ill. Gart. 12: 241, Fig. 50. 1887.

The photograph clearly shows this is the branched inflorescence form and links to the variegated form that eventually got to Australia. So this plant will be in limboland as to a name because it does not link to *T. viridiflora* (Beer) Baker in the strict sense.

My interest in this cultivar was triggered by a recent photo of a flowering plant from Peter Tristram from Repton, NSW. I then found out that Mick Romanowski was not the only Victorian growing this plant and had to add Chris Larson to the list. No doubt there are many other Australians growing this plant. I felt it needed a name but it is useless giving a name to a plant for it to be ignored which is why I got growers of this plant involved in the discussion. I asked Margaret for a name – she is good at these sorts of things – and we came up with 'Silver Candelabra'.

Just one word of warning. Even though the plant has been in Australia say over 30 years the adventitious offsets you can expect at the base are many and varied. It is suggested that you only select the variegated ones. If you don't then you will have to call them 'Silver Candelabra Novar' - in other words No variegation!! but if grown on they are just as likely to produce some variegated adventitious offsets!

Searching for Miss Fortuna, 2010 Style

Peter Tristram[1] Photos by the author.

Figure 1. The author (left) with Chester Skotak at the old sawmill site on the old road to El Cope.

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Figure 2. *Guzmania* 'Fortuna' (El Cope form)

The jungles of Panama abound with tropical plants in great diversity. Bromeliads, from the beautiful to the bizarre, flourish in its pristine rainforests. Panama's mountains thrust upwards from the massive forces of geological subduction, separating the warm waters of the tropical Pacific and Atlantic Oceans. The latitude, altitude and proximity to the warm oceans ensure a warm wet climate, perfect for the diverse and lush flora.

We planned a trip to visit these forests – the veteran from Costa Rica, Chester Skotak, the local expert and our gracious host, Bill Fitz and the novice, me. We were to meet up later at Fortuna with two more Aussies, Mark Paul and Bruce Dunstan and another Panamanian local, Carla Black. It would be the wet season, flowering time for many plants, too.

Searching for Miss Fortuna, 2010 style. The fabled Guzmania 'Fortuna' screamed into the brom headlines after the rare plant auction at the Houston World Bromeliad Conference in 1990. It had been introduced into horticulture in the late '80s by Harry Luther, ex Bromeliad Identification Centre director at Marie Selby Botanical Gardens. It was the sort of plant that would be the jewel in a hybridising program, a plant worth being obssessed with.

The lure of the new and colourful jewels, like G. 'Fortuna', was the inspiration for Chester Skotak's highly entertaining 2007 novel, Searching for Miss Fortuna, a story loosely based on true events.

Figure 3. *Guzmania circinnata*, El Cope.

Figure 4. *Aechmea veitchii* on the forest floor, El Cope.

The original plant was collected past the town of Fortuna, at the pass above the hydroelectric dam, at an altitude of about 1100m (3300ft). Unless it were in bloom, it would have looked like a small Guzmania lingulata or G. glomerata, sharing the forest with many other Guzmania species including G. scherzeriana, musaica, plicatifolia, rosea, zahnii, angustifolia as well as a myriad of Thecophylloid Vriesea species now placed in the genus Werauhia. Readers of the novel will know that the mystery Guzmania remained hidden during that mischievous adventure. We did not find it where Harry bagged it, but I will come back to this area later.

Our plan was to first explore the pass at El Cope, where I was assured by Chester that splendid specimens of G. 'Fortuna' ('El Cope' form) would be found in the Atlantic zone. Plants have been marketed for years as either 'Fortuna' or 'El Cope', both variations of a yet-to-be-published Guzmania species. For Chester this was bad memory lane, but for me it was paradise, back in bromeliad habitat at last, after a few years of abstinence.

The coastal plain along the Pacific side, the path of the Pan American Highway, has been largely cleared and settled. Nevertheless occasional areas full of epiphytes were observed. Of particular interest we spotted a spectacular form of Tillandsia fasciculata, in full bloom with imposing rosettes and shiny, multi-branched, cerise-red inflorescences. Other species noted included T. caput-medusae, T. brachycaulos, W. sanguinolenta and a few Pitcairnia species growing on rock walls. Mostly, though, there were no epiphytes.

The old road to El Cope rises quickly to the pass, with the imposing metal cross still where it was when the "Man from Florida" allegedly visited. Epiphytes increasingly adorned the trees, changing with altitude and at their climax just over the top, at about 800m. On the way up were more T. fasciculata and masses of G. monostacha in the regrowth before the fantastic diversity a little higher, with many Werauhia species like W. kupperiana and W. lutheri, stunning Pitcairnia species, like the ornamental, petiolate-leafed P. arcuata and P. aff. multiflora and many others.

Our tired vehicle had been parked near the pass where Chester remembered a long dead saw mill from thirty years ago when he first came here. We set off searching. The track snaked up to the lookout with the strangely incongruous cross, past the showy Pitcairnias and patterned-leafed Werauhias, past the vivid pink and yellow G. circinnata, and dazzling, similarly-coloured G. calamifolia v. rosea and groves of post-floral G. plicatifolia

.

At the top we admired the view over the narrow Atlantic plain to the Caribbean coast and beyond, the sea appearing mirror smooth in that grey, early morning light. But still no 'Fortuna'! There was only one way now to the lowlands – down the slippery, rocky, muddy path, still used by the local Indians.

Chester laughed, "No way boys," and decided to reminisce back at the top taking in more of the inspiring views while Bill and I scrambled and slid, eyes peeled for a flash of red, camera ready.

For the first few hundred metres nothing changed much, the forest largely logged out and host trees infrequent. The sheer dropoffs were just as Chester described in his book. Among the grasses were more delightful Pitcairnias with Werauhias and Guzmanias visible in occasional trees. The track was still being used as it has for eons, with occasional folk heading to the Pacific side on foot and steed.

Figure 5. *Werauhia insignis,* new variety soon to be named. Fortuna.

Then, around a corner in a patch of forest, just as Chester swore, there they were, resplendent, in full neon-red bloom, brightening the deep shade. What a sight! I wonder how the "Man from Florida" would have reacted if he had ventured down the same trail, still sobering up from a night with the Indians and saw this glory.

Figure 6. *Tillandsia fasciculata* on the way to Fortuna.

Further on many more were observed, always inside the canopy, though few were flowering. Closer inspection revealed the climbing nature of the species with the uppermost generation "feeding" from those lower, no doubt enhancing the size of the inflorescences. Another climbing species, G. musaica, adorned the same trees as well as G. donnel-smithii overlooking the beautiful Aechmea veitchii scrambling in the deep leaf litter.

Many images were taken, but my shoes had failed me, veteran "solemates" of Peru and Brazil, the worn leathers were destined to join the many other shoes strewn along the trail. I could go no further. I tied discarded plastic bags around them and could walk once more. I struggled back to the top vowing to purchase a pair of gum boots (rubber boots to you blokes in the States) in the first store I saw!

At the continental divide we joined up with Chester, who had found some interesting Pitcairnias, and headed back to the car. All evidence of the sawmill seemed gone until a faintly-yellow frame was noticed in the regrowth. The dozer skeletons were still there, abandoned, beside the concrete slabs from a previous age. The forest is returning and soon the legendary 'Fortuna' will have her kingdom to herself again.

And then it rained. The Heavens opened as we headed back, wet season after all, but clear skies greeted us for the next day's short trip to Fortuna. We started early,

Figure 7. More *Tillandsia fasciculata* on the way to Fortuna.

passing through magnificent groves of T. fasciculata, up, into the cloud forests of the Fortuna area. Near the dam we met up with Carla, Bruce and Mark ready for some serious exploration. I donned my new gum boots!

Things have changed since the first brom collectors went to Fortuna. The rough road is now a modern highway going all the way from the Pacific to the Caribbean. Much of the lush forest is still there, though significant areas have been heavily logged. The vegetation has inexplicably changed at the pass, where the first 'Fortuna' was found: not a single G. musaica, scherzeriana, lingulata, rosea nor 'Fortuna' was to be seen in the vicinity as remembered by Chester.

The area is a bromeliad lovers paradise. Many of the same species at El Cope adorn the trees and grassy areas in Fortuna. Carla, a heliconia enthusiast being "corrupted" into bromeliads, knew of excellent trails so our first was before the dam. The diversity was immediately evident – all manner of tropicals, many highly ornamental, flourished everywhere.

There were at least five terrestrial and epiphytic Pitcairnia species, many Guzmanias including G. scandens with its grassy foliage and delicate, pendant inflorescence, pin-striped G. circinnata, G. musaica var. rosea and G. glomerata full of ooze, caulescent G. angustifolia and a stunning red-bracted G. desautelsii, a myriad of Werauhia species including W. lutheri with its large leathery silver funnels, the purple foliaged W. woodsonii and discolor W. latissima, banded W. vittata, W. hygrometrica and many other hieroglyphed species and the occasional weird Racinaea contorta. Spined genera were conspicuous in their absence. The display of orchids, gesneriads, anthuriums, heliconias, etc, etc were also fabulous.

Once again Chester, Bill and I were tuned in for the hunt but we were to be disappointed - after 2 days in the area on both sides of the range, no 'Fortunas' were found. No doubt they are still there, somewhere.

On other trails many of the same species were seen as well as G. zahnii, G. sanguinea, W. insignis and its interesting variety brevifolia, so many other Werauhia species as well and so many Pitcairnia species.

Visitors to Panama would know that very few roads head to the hills, basically to Fortuna, Santa Fe and El Cope, so the view from the Pan American is an endless forested range to the north. It's hard to imagine what bromeliad treasures have yet to be looked upon, no doubt some new to science. Bill has also found large-growing 'Fortunas' in the coastal forests to the northeast of El Cope, as well as over the range from Volcan Baru in almost inaccessible areas. Chester still believes 'Fortuna' may be the most common bromeliad in all of Panama.

We suffered no misfortunes on this trip. Little Miss Fortuna, Chester's patron saint of calamities, reigns supreme in these forests.

EVENTS CALENDAR

Australia

April 7-10, 2011. 16th Australasian Bromeliad Conference "Broms on Arafura" Holiday Inn, 116 The Esplanade, Dawin.

United States of America

April 9-10, 2011. Bromeliad Guild of Tampa Bay Show and Sale. 2629 Bayshore Boulevard, Tampa, Florida. Contact Tom Wolfe (813) 961-1475.

November 4-6, 2011. Florida East Coast Bromeliad Society hosting the Florida Extravaganza at the Plaza Spa and Resort in Daytona Beach. The Cryptanthus Society's International Show will be held at the same venue on the same dates.

The Bromeliad Society International

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