

# **Journal of The Bromeliad Society**



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Cover photographs. Front: *Vriesea philippocoburgii* shown growing on a Brazilian pine standing alone at 100 m. in the Atlantic forest of Paraná, Brazil. Please see pages 195–198 for the discussion. Photo by Elton M.C. Leme. Back: *Aechmea castelnavii*, collected in Costa Rica by Chester Skotak. Photo by Jeffrey Block.

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## A New Species from Southern Brazil: A Tribute to Father Raulino Reitz Elton M.C. Leme and Andrea Costa

In November of 1990, during an expedition to Santa Catarina State, Jones C.da Silva, a bromeliad enthusiast of Rio Grande do Sul, Luiz Claudio Marigo, and I came across a vast, blooming population of a new *Vriesea* species in the neighborhood of the pleasant town called Campo Alegre. The predominant color of the species, yellow, was everywhere, decorating the pine-forested landscape.

This species, for which I propose the name *Vriesea reitzii* to honor the memory of Father Raulino Reitz is surprisingly common in the pine forest (*Araucaria angustifolia*) in the states of Santa Catarina, Rio Grande do Sul, and probably Paraná. It grows epiphytically, seldom on the ground, at altitudes from 750 up to 1,200 meters, or higher, where the temperature could fall easily below zero degrees Centigrade.

It was only a few days before our discovery that we learned about this ornamental species from Alvim Seidel, who had the plant identified as *Vriesea philippocoburgii*. In fact, in a broader conception adopted by Father Reitz, the new species had been misnamed as *V. philippocoburgii*. Our opinion, however, is that the new species can be visually differentiated by taking into consideration the typical populations from the Organ Mountains of Rio de Janeiro. The type specimen of *Vriesea philippocoburgii* was collected there and then typified by means of Wawra's beautiful painting. (fig. 1). *Vriesea reitzii* is in fact related to *Vriesea philippocoburgii* but differs from it by the yellowish-green leaf blades with transverse, darker green lines, the yellow primary bracts, the branches with usually naked peduncles, as well as by the yellow floral bracts, strongly carinate and incurved toward the apex, and the yellow rachis.

In Santa Catarina, the evidence suggests that *Vriesea philippocoburgii* (fig. 2) concentrates its populations from sea level to about 500 meters. It is found growing at higher elevations, however, inside the Atlantic rain forest as well as the restinga vegetation of the state of Rio de Janeiro. With that protective cover it avoids the colder zones.

*Vriesea reitzii* (fig. 3), on the other hand, is well adapted to the colder temperatures of higher altitudes, thus coinciding with the domain of the Brazilian pine. That being the case, temperature could be one of the most restricting factors of the differing altitude habitat preferences of these species.

With this very ornamental new species from the high plateau of Santa Catarina, we have the ideal opportunity to pay tribute to the late Fr. Reitz for



his tireless endeavors in increasing knowledge of the family Bromeliaceae and the entire flora of southern Brazil.

***Vriesea reitzii* Leme & Costa, sp. nov.**

*A. Vriesea philippocoburgii* Wawra, cui affinis, limbis foliorum omnio flavovirescentibus sed transversim virido-lineolatus ornatis; bracteis primariis supernis flavis; pedunculis ramorum abacteatis; bracteis floriferis flavis, apicem versus manifeste carinatis incurvatisque; rache flava differt.

*Plant* epiphytic, lacking rhizomes, flowering 90–120 cm high. *Leaves* many, forming a dense, bowl-shaped rosette, suberect-arcuate; *leaf sheaths* elliptic, 12–14 cm long, ca. 9 cm wide, inconspicuously but very densely brown lepidote on both sides, dark purple on both sides or pale inside; *leaf blades* sublinear, not narrowed at base, apex shortly acuminate to broadly acute and apiculate, 35–55 cm long, ca. 5.5 cm wide, yellowish green throughout with wavy, darker green transverse lines, glabrous. *Scape* erect, 35–50 cm long, ca. 1 cm in diameter; *scape bracts* the lower foliaceous, the upper narrowly oval-lanceolate, acuminate to acute and apiculate, not completely hiding the scape, suberect. *Inflorescence* paniculate, usually bipinnate but sometimes tripinnate, 40–50 cm long, 10–20 cm in diameter; *primary bracts* equaling to distinctly shorter than the naked, sterile

**Figure 1**  
*Vriesea philippocoburgii*. A reproduction of plate 37 A of *Itinera principum* S. Coburgi, by H. Wawra.<sup>1</sup>



Author

<sup>1</sup>See National Union Catalog: Wawra, Heinrich, *ritter von Fernsee*, 1831–1887. *Itinera principum* S. Coburgi. Die botanische ausbeute von den reisen ihrer hoheiten der Prinzen von Sachsen-Coburg-Gotha. I. Reise der prinzen Philipp und August um die Welt (1872–1873). II. Reise der prinzen August und Ferdinand nach Brasilien (1879) . . . Wien, C. Gerold's sohn, 1883–88. QK5.W35.



Photographs by the author

**Figure 3**  
*Vriesea reitzii*. This new species was named in honor of Fr. Raulino Reitz, noted for his research in the flora of Brazil and bromeliads in particular.



**Figure 2**  
*Vriesea philippocoburgii*, shown growing in a shady area near Morretes in the state of Paraná, flowers 1–3 m high. The bright red color of the primary and floral bracts presents a strong contrast with the yellow of the sepals.

base of the branches, the lower are like the upper scape bracts but gradually reduced, the upper suborbiculate, acute and apiculate, yellow; *branches* 15–20, suberect, subdensely arranged, 10–20 cm long, with 5–10 flowers, peduncles 4–7 cm long, naked or, if bracteate, only the lower with single bract hiding an abortive flower or branch, rachis flexuous, yellow; *floral bracts* ovate, 15–20 mm long, ca. 12 mm wide, acute, remaining suberect or slightly secund with the flowers, glabrous, nerved, yellow, sharply carinate and incurved toward apex, equaling the midpoint of the sepals even before anthesis; *flowers* ca. 4 cm long (including the petals), distichous; before anthesis divergent, slightly imbricate and subdensely disposed; afterwards markedly secund downward and laxly arranged, pedicels 5–7 mm long, ca. 4 mm in diameter; *sepals* sublinear-lanceolate, acute, 23–27 mm long, ca. 8 mm wide, ecarinate, yellow, glabrous; *petals* narrowly lanceolate, acute, ca. 30 mm long, ca. 6 mm wide, yellowish green, bearing 2 acute or subdentate appendages 6 mm long at base, basally connate for ca. 2 mm; *stamens* distinctly exserted; *filaments* adnate to the basal tube of the petals; *anthers* linear, ca. 6 mm long, base and apex obtuse.

**Type.** Brazil. Santa Catarina: County of Campo Alegre, locality of Ilha, epiphytic in pine forest, ca. 850 m alt. Leg. November 15, 1990, *Elton M.C. Leme 1654, Jones C.da Silva & Luiz C. Marigo*, (Holotype HB; isotype RB).

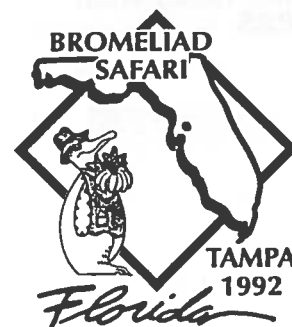
**Distribution:** Brazil. Santa Catarina: without exact locality, *A. Seidel s/n* (HB); Papaduva, ca. 800 m alt., Dec. 17, 1950, *R. Reitz 3981* (HBR, HS). Rio Grande do Sul: Cambará do Sul, Fortaleza, ca. 1,000 m alt., flowered in hort., Dec. 1990, *Jones C.da Silva s.n.* (HB).

#### Material used for comparison:

*Vriesea philippocoburgii* Wawra: Rio de Janeiro, Petrópolis, Serra da Estrela, Mar. 25, 1957, *E. Pereira 10569* (HB); *ibid.* old road to Petrópolis, April 10, 1952, *L.B. Smith 6497* (R); Teresópolis, Granja Comari, Feb. 10, 1964, *A. Castellanos 24553* (GUA); Nova Iguaçu, Tinguá, June 4, 1962, *A. Castellanos 23142* (HB, GUA); Rio de Janeiro, Serra da Carioca, station of the Centro de Cons. da Natureza, Feb. 28, 1969, *P. Caruata 796 & C. Angeli* (HB, GUA); *ibid.*, Morro Queimado, Apr. 24, 1963, *A. Castellanos 23982* (HB, GUA, R). Santa Catarina, Itajaí, Fazenda Hill, Mar. 18, 1954, *R. Reitz & Klein 1760* (HBR, HB). Paraná, road to Paranaguá, Rio da Praia, April 27, 1991, *E.M.C. Leme 1769, G. Hatschbach & J. C.da Silva* (HB).

**Acknowledgments:** We must thank Juarez T. Cunha of the prefecture of Campo Alegre County, as well as Marcos Schredor and Marcelo Ribeiro, who participated and cooperated extensively with our field activities making possible the success of our excursion to that region of Santa Catarina.

Rio de Janeiro



## BROMELIAD SAFARI

10TH WORLD CONFERENCE  
JUNE 11 - 14, 1992  
TAMPA, FLORIDA

Dear BSI Members:

Safari plans are falling into place very fast. The Saddlebrook Expo will start at poolside on Thursday evening, June 11, 1991, with enough rations to fill the most hearty appetite. The natives will entertain and the comradery will abound.

Then on to the lagoon show of plants. The judged show will be in a lagoon pavilion with floor-to-ceiling glass on three sides surrounded by the pool and a bridge extending the lagoon to the entrance of the pavilion.

From that setting you will move on to enjoy a collecting trip through the commercial and membership sales areas, including the De Roose Nursery from Belgium. We are planning the largest array of bromeliad displays and exhibits ever presented at a world conference.

Friday and Saturday mornings you will wake to a full day of home tours, seminars, and other surprises. The Friday night rare plant auction is stacking up to be the best ever. The proceeds will go to the Bromeliad Identification Center at the Marie Selby Botanical Gardens.

The second world-wide Show and Tell will be an event you won't want to miss. Please bring several of your best slides to share with others.

Don't forget to start grooming your plants for the judged show. Competition will be open to all growers and we want it to be the best possible show.

Harry Luther, director of the Bromeliad Identification Center will be our principal speaker. He has some new material that will be of interest to all growers.

So! Pack your gear and join us on our safari through the bush of Saddlebrook.

Early registration will end on 1 November 1991. Early registration is \$95.00. Make your check payable to BGTB World Conference and mail it to Mrs. Gwen Carnegie, Registrar, 1734 Magnolia Road, Belleair, Florida 34616.

Please let me know if you need further information.

Tom Wolfe

5211 Lake LeClaire Road, Lutz, Florida 33549

Please see our ad on page 232.



# A Report of Rediscovered Aechmeas

Walter H. Berg



Figure 4

Two plants recently re-collected in Ecuador by Wally Berg and Dennis Cathcart are shown here for the first time in color: *Aechmea involucrata* André (above), and *A. fraseri* Baker (below).



Figure 5

Photos by Author

Harry Luther, director of the Bromeliad Identification Center, suggested I offer a couple of slides on two aechmeas that Dennis Cathcart and I found on our recent trips to Ecuador. Since there have been no collections of these species reported in recent years, it seems that we have rediscovered them. The photograph of *Aechmea involucrata* (fig. 4) was taken in habitat; that of *A. fraseri* (fig. 5) was taken of the plant in my collection. According to Harry, neither of these plants has ever been photographed in color before, but neither have they been reported in cultivation.

We collected only four plants of *Aechmea involucrata*. One bloomed in the research collection at The Marie Selby Botanical Gardens this year but so far has produced only one pup. The berries produce two to three seeds each and most have been sterile so it seems that it will be a while before this species will be generally available.

We found only two specimens of *Aechmea fraseri*. The plant that bloomed this year produced a fine lot of seeds although the inflorescence was less densely flowered than expected. In a few years there will be enough of this plant to go around.

Sarasota, Florida

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## Contributor and member Larry Hodgson has been honored for his writing.

Larry was named Indoor Plant Expert of the Year for writing the best article about houseplants during the past year. It appeared in the January-February 1990 issue of *Houseplant Forum*, a magazine that he both edits and publishes.<sup>1</sup> The prize, offered by the Florida Foliage Association, included a round trip for two to Florida where Larry was presented a plaque and conducted on a week-long tour of nurseries and gardens. We congratulate him on this honor. We note also that he is editor-in-chief of the comprehensive and beautifully illustrated magazine, *Fleurs, Plantes, Jardins*, published by Editions Versicolores, Inc., Quebec.

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<sup>1</sup>Write to HortiCom Inc., P.O. Box 128, Radisson, WI 54867-0128 for subscription information.

# Thoughts on Tillandsias

Richard Oeser, translation by Albert B. Graf

*George Milstein was the first editor of the Bromeliana of the Greater New York Chapter of The Bromeliad Society, in later years renamed The New York Bromeliad Society. His volume 1, numbers 2 and 3 (December 1963 and January 1964) include a gift to the New York chapter from Dr. Oeser (reprinted here) with the preface: "Dr. Richard Oeser of Kirchzarten, West Germany... is a 72-year old physician [who] has the largest known collection of tillandsias in the world. He has grown and intensely studied them for more than 30 years and has contributed much to the world's knowledge of this genus. He began his collection in a rather interesting fashion. Originally, Dr. Oeser collected and raised tropical amphibia. In order to keep certain species happy, he had to supply them with the bromeliads they normally spent their lives in. Eventually, his interest became more botanical than zoological. He travels around Europe a great deal, giving talks on his beloved plants, and in his great generosity has consented to write this article for us." Dr. Oeser's many articles in the BSI Bulletin and Journal from 1951 through 1980 have been read by generations of bromeliad lovers in the original or reprinted form. He was one of the original honorary trustees of this society. We thought that you would like to read an article by him that was not generally known.—Ed.*

Tillandsias are "Miracle Plants." Humans cannot understand a miracle, even if they experience it, even if—like the author of these lines—they live with it daily for many, many years.

It was a great advance when science learned to understand the special function of the scales on tillandsias in connection with their water supply intake. But how can one explain how the seeds of aerophytic tillandsias, for example—*Tillandsia bergeri* (Argentina), which have not been exposed to moisture—will germinate in a lighted room, loosely spread out, in 50–80%, or rarely, 90% humidity?

Tillandsias grow by means of nutrients supplied to them through the air. Some highly succulent types are growing in my greenhouse even though they have never been dipped in nutrient solutions. At a future time, I will report on the ions which have been chemically proved as being normally present in the air. All important elemental ions necessary to the growth of plants are present in the air although, in localities far from the sea, the occurrence of magnesium could not be perfectly determined. In my greenhouse, I add fertilizer to the atmosphere artificially, yet from these minimum concentrations of available ions of ammonia, potassium, phosphorus, etc., a large tillandsia will double its weight within a single growth period. This is partly what makes this genus so fascinating. I am

convinced that tillandsias command forces which are unknown to us as yet, and which other plants are unable to use. Might it be possible that electrostatic potential differences are developed through which ions of opposite charges are called into the service of the plant?

Tillandsias are, in the main, tropical plants. We visualize, in our understanding of the word "tropics," a place that is very warm. There is a great deal of evidence that tells us, however, that certain plants will thrive not because of the heat, but in spite of it. Their growth activities must take place, more or less, during the cooler and moister periods, which even in the tropics are known as "winter" although these may not coincide with winter in northern latitudes.

One experiences constantly that during hot periods, the flowers of tillandsias will not open properly, in spite of perfect buds. On the other hand, their growth is most luxurious during the cooler months of autumn. At the same time, we should remember that the day length in cooler latitudes alternates much more extensively than in the tropics where it is 12 hours usually throughout the year.

The climate (temperature, humidity, rain, wind, etc.) shows in the tropics with regular and very significant rhythmic changes. Their adjustment to these conditions is another marvelous characteristic of tillandsias: they may grow on a tree that loses its leaves during the dry period and so, without any protection, they must then try to persist for months, exposed to burning sun, as if semi-dormant. A South American once told me that in times of excessive dryness even their cacti will desiccate but never their "Claveles del aire," or tillandsias. This is because of their ability to extract their needs for moisture from the somewhat moist night air. They certainly must also collect valuable salts for storage during dry periods. This allows them to increase in size readily at the beginning of the moist season and to form flower spikes, often larger than the whole plants themselves.

In this relation, similarities exist, for instance, with the tulip bulb, which rests for months in spite of the fact that it is buried in soil sufficiently moist for it to start sprouting in autumn if it so chooses. Yet, it will not because in unerring conformity with the law governing its rhythm, it will wait for its cue. Only when very definite preconditions are in effect will flowers appear. We know that one of the conditions that induces flowering in many plants is a preceding cooling period, and we can, as a result, bring lilies-of-the-valley into bloom as early as Christmas. Similar conditions, no doubt, affect bromeliads, especially tillandsias. One can not lose courage nor become impatient if they appear to stand still.

Tillandsias rarely die from excessive dryness, especially if the atmospheric moisture is higher than 50%. However, they may rot during the rest period if we keep them cold, wet, and dark just then. They will do best, of course, if their

rest and growth patterns cycle into similar climatic conditions of the year as the plants are accustomed to. Acclimatization will usually require several years. Until used to their new surroundings, they may become smaller rather than larger during this time. Some may perish altogether. But suddenly, they will take hold, and may triple in size within a very few months.

Besides the species that are strictly governed by the calendar of their native habitats, alternating growth and rest periods, there are others that utilize every opportunity to grow all year in the presence of sufficient light, warmth, moisture and nourishment. Such species are the most desirable for beginners. They are widespread and plentiful in their native areas, and tend to give rise to interesting varieties. *Tillandsia caput-medusae* and *T. pruinosa* belong to this group.

Whether a tillandsia is in its resting or growing period can be determined by comparing the innermost youngest leaves of their rosettes. If they are short, stiff, hard and spread apart and the roots are hard and woody, then the plant is mature and resting. Growing plants have tender inner leaves, close and even sticking together, and new roots are forming. During this growing stage, the most intensive culture is recommended, including immersion in water mildly enriched with fertilizer.

These recommendations should help the novice to become acquainted with this intriguing and unconventional genus. Since these plants have been deprived of contact with ground and earth, their needs forced them to develop a variety of new skills so that they could exist up high on trees and rocks. It will take many, many years for the enthusiast to even suspect their needs, let alone to understand them.

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**LUTHER REPRINTS.** BSI-affiliated society librarians who want to continue to receive Harry Luther's reprints are requested to send their current address to him at 811 South Palm Avenue, Sarasota, FL 34236. Those not responding within 60 days will be removed from the list because of repeated instances of copies and postage being wasted on wrong addresses.



## Pros & Cons of "Standard" Bromeliad Shows

Carol M. Johnson

Until the late 1970s, there were no certified bromeliad judges and no "standard" shows. There were a lot of shows, but no rules or standards to follow. It naturally evolved that the shows followed the pattern of flower shows staged by the federated garden clubs. Then, about 1978, The Bromeliad Society, Inc. decided to set standards for exhibiting bromeliads and to train bromeliad judges to implement those standards. Schools were organized and several groups of judges trained. The first crop of bromeliad judges received its certificates at the world bromeliad conference in Corpus Christi in 1982.

When the world bromeliad conference was held in Orlando in 1980, there were no certified judges. Oddly enough, there has not been a world conference since with a head table that could compare with that of the 1980 conference. Had the point system been in effect at that time, it is doubtful if Best in Show (Bert Foster's *Guzmania lindenii*) would have gotten a red ribbon. . . .

Enthusiasm for standard bromeliad shows began to wane in the late 1980s. Many societies wanted to innovate. The memberships were split and much grumbling was heard. Some of the objections put forth were:

1. The shows were put on for the benefit of the judges, not for the public or the membership.
2. The only plants seen at shows are the safe blue ribbon plants with a minimum of leaves because the more leaves a plant has, the greater the potential for point deductions. I happen to agree with this premise, especially when point scoring for top awards. It is so easy to end up with a very innocuous (but perfect) plant as Best in Show. There are times when the public must think the judges are mad as hatters. This is called second guessing the judges and many times savvy exhibitors have been known to enter a whole lot of perfect three-leaf plants in order to win the Sweepstakes Award.
3. Bromeliads are, as a general rule, epiphytic plants, yet in the most important section of the show, they must be exhibited in soil and potted in standard pots.
4. Standard bromeliad shows are too expensive. A schedule must be printed, awards purchased, gifts and a luncheon for the judges must be furnished. The small societies are going to be stretched too thin.

5. This is the grumble heard most often: The judges don't know enough about the plants. In some cases this may be true, but mostly this criticism is unfair. Judges must also be exhibitors and they get to see a variety of plants at the shows they judge. I do not agree with the practice of inviting poor judges to work a show just because they need the assignment to stay certified. This is the only area of the standard show not dictated by the *Handbook for Judges & Exhibitors* and thus is an area where the local society can exercise some control. Invite good, experienced, knowledgeable judges and the show will be a good one. Becoming a bromeliad judge requires attending a standard BSI judging school at personal expense. The school consists of five one-day sessions and a subsequent final exam. Judges are rarely reimbursed for trip expenses incurred when judging a show. They give their time and substance to make your show a success and quite often endure verbal abuse from disgruntled exhibitors. The *Handbook* also says a judge should write the judge's chairman a "thank you for asking me to judge" note after the show. Methinks this is a little much, after spending probably \$100 in trip expenses and standing on the feet all day.

6. Judging is not consistent. In this instance, I agree. One panel of three judges will give many blue ribbons. Another panel, meanwhile, will judge harshly and give very few blue ribbons. The plants don't care, but the exhibitors will never understand. Yellow and white ribbons serve no purpose, are an insult to the exhibitor, and should be abolished.

Now let me defend the standard show. All of our Florida societies have a number of members who dearly love to exhibit their plants and compete for prizes. In order to compete, they must become knowledgeable in several areas.

1. Nomenclature. Plants must be entered with the correct name or be disqualified unless rescued by a capable classification chairman.

2. Grooming. Competition plants must be well groomed and be disease free to qualify for top awards.

3. Exhibitors get to see how other members grow their bromeliads and what constitutes award-winning plants.

4. Participation. A bromeliad society is not meant to be just a meeting every month. A bromeliad show brings the members together and thus acquainted with one another. Those members who do not want to exhibit will join in the work and the fun.

5. Education. The aim of every bromeliad society should be to educate (and dazzle) the public. What better way than a show?

The ideal solution would be to stage two shows a year, or alternate one year standard, one year exhibition only. This should keep all the members happy and if as much effort is put into an exhibition as for a standard show, soon

the competition will evolve between the two. Remember, it is also perfectly acceptable to enter plants in a standard show "for exhibition only." Those societies that never exhibit in any fashion, or skip a show this year usually fall by the wayside.

Write me your opinion on this subject and I will be glad to print it.

Longwood, Florida

(Reprinted from *Florida Council of Bromeliad Societies, Inc. Newsletter*, May 1991. Mrs. Johnson is editor of the *Newsletter*, a certified bromeliad judge, and owner of *Pineapple Place*, a well-known bromeliad nursery. She was general chairman of the 1980 world bromeliad conference held in Orlando. All members are invited to express their thoughts and recommendations on this subject in writing to Mrs. Johnson or to Geoffrey Johnson, who was elected chairman of the BSI Judges Certification Committee after this commentary was first published. The Judges Certification Committee oversees all aspects of judges certification and judging. Their address is: 3961 Markham Woods Road, Longwood, FL 32750.—Ed.

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## New Cultivar Checklist Is Available

A checklist entitled *A Preliminary Listing of All Known Cultivar and Grex Names for the Bromeliaceae* has been completed and printed and is now available to anyone interested and able to send \$20.00 to the BSI Registrar, P.O. Box 81464, Corpus Christi, TX 78468-1464. Telephone 512-993-3928.

The purpose of this list is to create an historical archive for information concerning the cultivated bromeliad. Many of you have unique knowledge of the plants listed that should be included in future editions. Please share this knowledge by letter or phone with the registrar. After a short period, this list will be reprinted to include your changes and additions.

The list includes all names found in use including invalid, obsolete, duplicate, and inaccurate ones. These need your help to correct or modify. That is why the list is called "preliminary." The next edition of the list will be as accurate and complete as you choose to make it. Please order this one, use it, peruse it, critique it, argue with it, but do not ignore it if you have information that should be in it.—D.B.



## A New Tillandsia Species: *Tillandsia sueae*

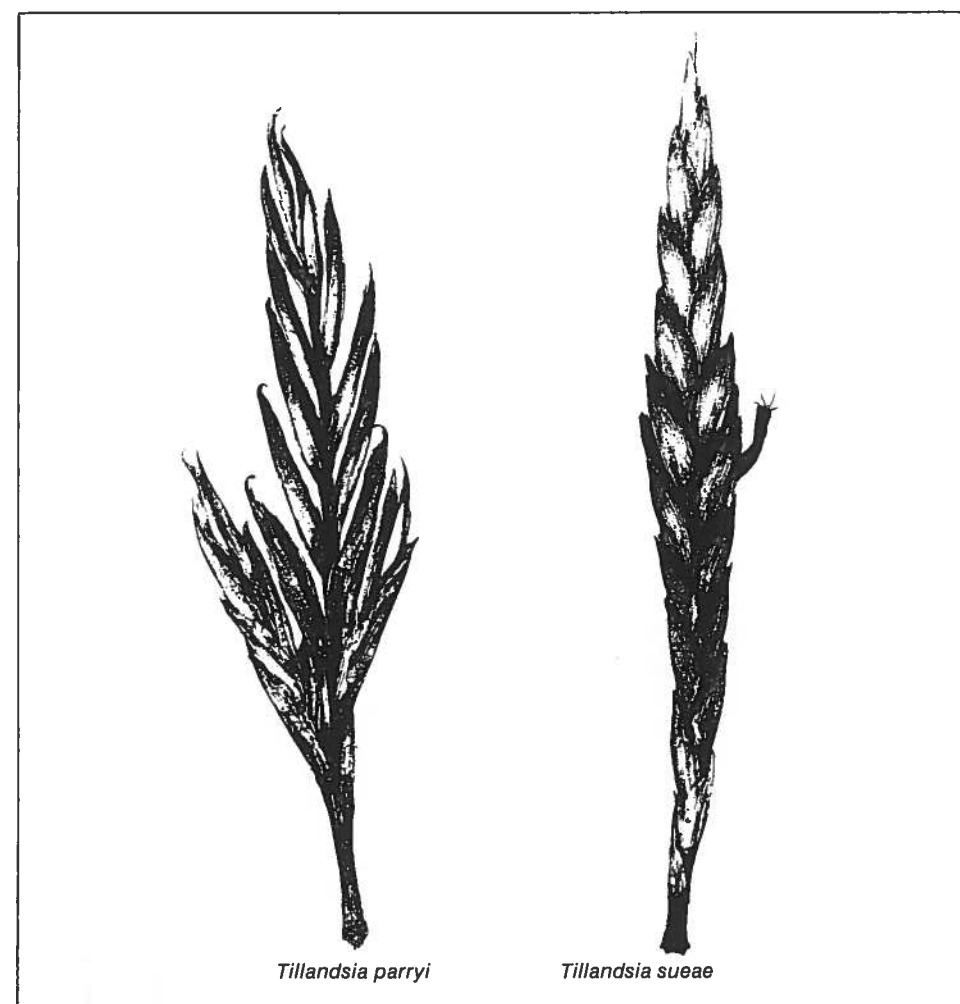
Renate Ehlers

A *Tillandsia parryi* Baker, cui affinis, characteribus sequentibus differt: rosula rariter cum prolibus; rami inflorescentiae adscendenti-patentes; bracteae florigeræ latiores statu sicco rhachidem plusminusve celantes, carinatae; sepala latiora, ovata, posteriores viventes obtusiter carinata sed sicca carinata; petala violacea. Plerumque epiphytica.

A *T. thysigera* E. Morren ex Baker, cui versimiliter etiam affinis, habitu minore, spicis multo brevioribus angustioribusque et sepalis minoribus ecarinatis recedit.

**Typus:** Mexico. Estado Puebla: circa urbem Tlaxcala, Martio 1982, R. & K. Ehlers EM 82134 (Holotypus et isotypi WU).

*Plant* stemless, flowering 60–100 cm high, rosette 60 cm in diameter. *Leaves* many in a spreading, funnellform rosette, to 50 cm long, densely and finely appressed-lepidote throughout. *Sheaths* distinct, broadly elliptic, to 11 cm long and 6 cm wide, light brown, finely brown punctulate lepidote on both sides. *Blades* narrowly triangular, caudate-attenuate, 3 cm wide at base, to 40 cm long, spreading or recurved, green-grey. *Scape* stout, erect, short. *Scape bracts* foliaceous, few, densely imbricate, concealing the scape, the blades recurved. *Inflorescence* thyrsoid, at least 40 cm long, 15–20 cm in diameter, bipinnate to subtripinnate (the lower ones occasionally with a second, smaller lateral spike), compound of 15 or more spikes, inflorescence internodes 2–4 cm long. *Primary bracts* with an ovate sheath much shorter than the axillary spike and a narrow, foliaceous, recurved blade exceeding the lower spikes, the upper ones shorter and merely apiculate. *Spikes* to 20 cm long, 2–2.5 cm wide, narrowly oblong, dorso-ventrally compressed, the flat side directed toward the axis, ascending from 45 to 60 degrees, to 5 cm stipitate, with several sterile bracts at the base, spike internodes 1–2 cm. *Floral bracts* erect, densely imbricate, at anthesis rachis not or only slightly visible, rose or green with rose, 3–3.7 cm long, flattened to 1.7 cm wide, exceeding the sepals, ovate, broadly acute, subchartaceous, sparsely punctulate lepidote and inconspicuously nerved on both sides when fresh, slightly carinate. *Sepals* 2.5–3 cm long, to 1.1 cm wide, lance-ovate, broadly acute, membranaceous with hyaline margins, green, prominently nerved, glabrous, equally subfree, the posterior ones carinate. *Petals* tubular erect, lingulate, apex only slightly curved outward, 5–5.8 cm long, to 0.9 cm wide, violet (#46 amethyst after the color index of Graf in *Exotica*), base half white. *Stamens* and *pistil* exerted. *Filaments* in two series of unequal length, to 6 cm long, the apical third 1 mm wide, ovate in cross-section, green (#80 Nile green), white, thin toward base.



Author

Figure 6

*Anthers* 3 mm long, elliptical, filaments attached dorsally below the middle, blackish brown, pollen egg-yellow. *Style* to 6 cm long excluding the ovary, whitish green, 5 mm violet below the stigma. *Stigma* violet, the small lobes erect, papillose. *Ovary* 5–7 mm high, 3 mm wide, conical, green.

*Tillandsia sueae* differs from *T. parryi* Baker in the following characteristics: Plant not producing offsets; inflorescence branches spreading-ascending; floral bracts slightly carinate; rachis not visible at anthesis; sepals ovate and the posterior ones carinate; petals violet, flowering after daybreak, not nocturnal; epiphytic.

From *Tillandsia thysigera* E. Morren ex Baker, it differs in the smaller size, the much shorter and narrower spikes and the nerved, carinate sepals.



Figure 7  
*Tillandsia parryi* (left) habit;  
 (below) inflorescence.

Photographs by the author

Figure 8

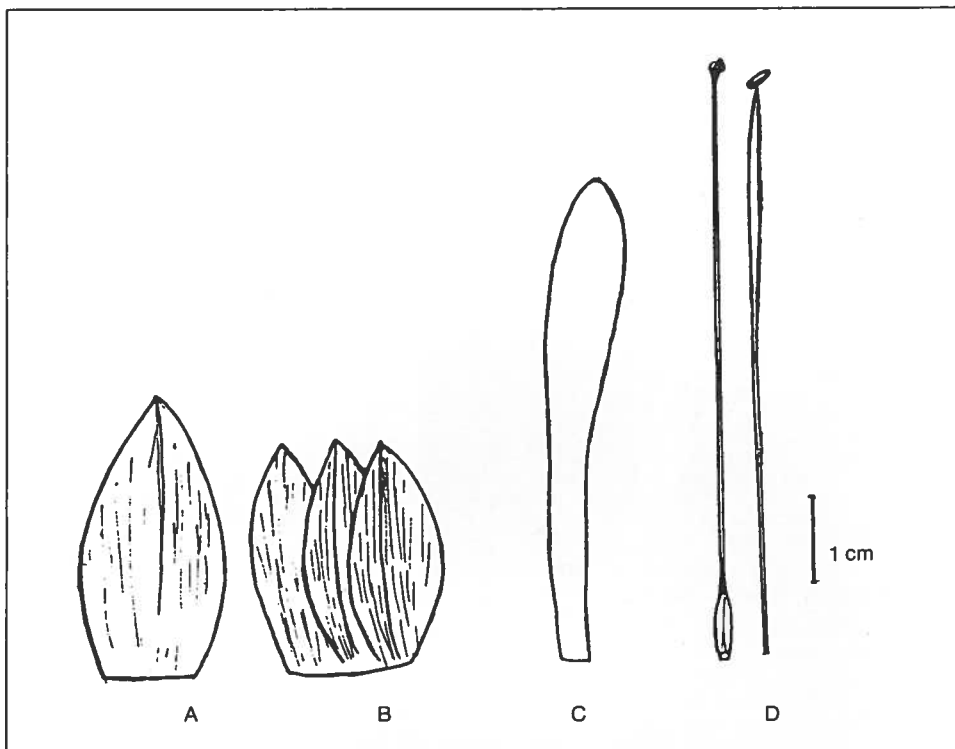


Figure 9  
*Tillandsia sueae* (left) habit;  
 (below) inflorescence.

Photographs by the author

Figure 10





Author

Figure 11

*Tillandsia sueae*. A, floral bract; B, sepals; C, petal; and D, stamens.

**Holotype:** Mexico. State of Puebla: near Tlaxcala, March 1982, K. & R. Ehlers EM 82134 (WU).

Sue Sill (Gardner) states in her dissertation (1982); "Saxicolous specimens from Valle de las Fantasma (San Luis Potosi) have nocturnal, chartreuse flowers, strict inflorescence branches, strict leaves in a narrow funnellform rosette with numerous offsets.

"Epiphytic specimens collected from south of Monterrey (Nuevo Leon) and south of Xilitla (San Luis Potosi) have lavender corollas and post-daybreak anthesis, spreading inflorescence branches, leaves in a spreading, funnellform rosette.

"These types are distinct enough to be recognized as a distinct species."

Sue Sill accomplished an unusual amount of fieldwork and prepared excellent studies on the genus *Tillandsia*. She was the first to discover the distinction between these two species. For these reasons, it is an honor for me to dedicate the plant to her.

#### Additional material examined:

*T. parryi* Baker. Parry & Palmer 873 (Type); Estdo. San Luis Potosi, between San Luis Potosi and Río Verde, March 1985, R. & K. Ehlers EM 850301, saxicolous; Estdo. Guanajuato, Monte San Felipe, 1988, leg. L. & K. Kohres s.n., saxicolous; Estdo. Queretaro, between San Juan Río and Tula de Allende, 1988, leg. L. & K. Kohres s.n., saxicolous.

*T. sueae* Ehlers. Estdo. Puebla, Sahagun, 1988, leg. L. & K. Kohres s.n., epiphytic; Estdo. Hidalgo, Tolontongo, 1988, leg. L. & K. Kohres s.n., epiphytic.

**Acknowledgment:** My thanks to Dr. Walter Till, University of Vienna, for his cooperation and for the Latin diagnosis.

#### Bibliography:

Gardner, C.S. A systematic study of *Tillandsia* subgenus *Tillandsia*. College Station: Texas A&M Univ.; 1982. Diss.; Ann Arbor, MI: University Microfilms International; 1982.

———. Preliminary classification based on floral characters. *Selbyana* 9:130-146; 1986.

Smith, L.B.; Downs, R.J. *Tillandsioideae*. Flora Neotropica. Monograph no. 14, pt. 2. New York: Hafner Press; 1977.

#### Letter

Dear BSI Affiliate Members:

As some of you may have heard, the **Bromeliad Identification Center has moved!** The BIC, the Orchid Identification Center, the herbarium, and other research resources and offices are now located at 711 South Palm Avenue, one block north of their previous location. Our research library and periodical collections will join us soon in our new, 4000-square foot facility. This new Science Center, for the first time in the history of the gardens, will allow us to house all of our research programs in a single, safe and secure, climate-controlled building. Those of you who have visited BIC in its old, cramped, and dilapidated quarters can appreciate this positive change.

Contributions toward the cost and maintenance of this new facility will be gratefully accepted. I shall be glad to answer any questions. Our mailing address is still 811 South Palm Avenue, Sarasota, FL 34236, but we have a new telephone number: 813-955-7553.

Sincerely,

Harry E. Luther  
Director, BIC

P.S. A special BIC "Open House" will be given during the Sarasota Bromeliad Society show on October 12 and 13. Hope to see you there.



# *Pitcairnia funkiae*, a New Species from Costa Rica

Michael A. Spencer and Lyman B. Smith

Volcán Arenál is one of seven active volcanoes in central Costa Rica. In 1983, the Smithsonian Institution, in collaboration with the Instituto Nacional de Biodiversidad of Costa Rica, initiated a project to study the volcano and biology of that volcano. One aspect of the project was to study the flora. While examining Bromeliaceae specimens that she had collected, Dr. Vicki Funk, a curator at the Smithsonian, discovered a new species of *Pitcairnia*.

*Pitcairnia funkiae* M.A. Spencer & L.B. Smith, sp. nov.

*P. atrorubenti* (Beer) Baker affinis, a qua laminis foliorum basi serratis, inflorescentia crassocylindrica truncataque, bracteis florigeris et sepalis dense ferrugineolanatis et petalis atosanguineis differt.

*Plant* stemless, epiphytic, lithophytic, or terrestrial, flowering to 1 m tall. *Leaves* 10–15, isomorphic, rosulate, erect, 12–15 dm long. *Sheaths* small [measurement not specified], triangular-ovate, entire, dark castaneous, densely brown-lanate. *Petioles* slender, canaliculate, densely brown-lanate, 3–4 dm long and 8–10 mm wide, laxly serrate with small, dark, recurved spines. *Blades* linear-lanceolate, acute to long-attenuate, 9–11 dm long and 5–8 cm wide, entire except at the base, glabrous. *Scape* erect, stout, 1–1.5 cm in diameter, densely brown-lanate. *Scape bracts* strict, imbricate, much exceeding the internodes, the lower subfoliaceous but not petiolate, green, the upper broadly elliptic, acute, 7–9 cm long and 2–3 cm wide, entire, chartaceous, densely brown-lanate, reddish brown. *Inflorescence* simple, erect, stoutly cylindric, truncate, 25–35 cm long and 7–10 cm in diameter, much exceeded by the leaves. *Floral bracts* elliptic with a reflexed, triangular apex, 55–85 mm long and 20–30 mm wide, entire, densely brown-lanate, reddish brown. *Flowers* erect, subsessile. *Sepals* narrowly oblong, acute, slightly asymmetric, mucronate, 35 mm long and 6 mm wide, posteriorly carinate, dark castaneous at extreme base, densely brown-lanate, light brown, much exceeded by the floral bracts. *Corolla* zygomorphic, recurved. *Petals* linear, broadly acute, 80 mm long and 7 mm wide, unequal, bearing two bidentate appendages at base, sparsely white-lepidote, dark maroon. *Stamens* included, 65 mm long. *Filaments* free, linear, 50 mm long and 1 mm wide. *Anthers* sagittate, 15 mm long and 2 mm wide, dorsifixed, yellow. *Style* terete, elongate, 55 mm long and 2 mm in diameter. *Stigma* 5 mm long, lobes unequal, loosely spiraled. *Ovary* conical, 10 mm long and 4 mm in diameter, 3/4 superior. *Ovules* numerous, caudate.

*Type*: Costa Rica. Alajuela Province: northeast side of Volcán Arenál on the Río Tabacón flow, growing in dwarf forest on approximately 500-year old block



V. Funk

Figure 12

*Pitcairnia funkiae* is a new species from Costa Rica. It is allied to *P. atrorubens* (Beer) Baker.

lava flow with individual lava blocks still intact, 8 May 1987, V. Funk 10189. **Holotype**, CR; isotype US).

**Other specimens examined**: Costa Rica: Alajuela Province, 3.5 km west of Fortuna, 2.5 km northwest of New Volcán Arenál along sloping base, elev. 1,500 m, 5 Aug. 1972, J. & C. Taylor 11603B (US); northwest slope of Volcán Arenál, Río Tabacón flow, low open forest on large lava blocks, 28 May 1985, V. Funk, W. Melson & J. Funk 6963 (US); slopes of Volcán Arenál between Fortuna and Palma, old lava fields with dense, dwarf forest, elev. 650 m, 25 July 1990, Luther, Skotak, & Bak 2812 (SEL, MO, CR).

**Relationships**: Based on the classification system of Smith and Downs (1972), *Pitcairnia funkiae* most closely resembles *P. atrorubens* (Beer) Baker but can be readily distinguished from that species by its basally serrate leaf blades, stoutly cylindric, truncate inflorescence, densely brown-lanate sepals and floral bracts, and dark maroon petals. In *P. atrorubens* the leaf blades are entire, the inflorescence is more slender and suspicate, the sepals and floral bracts are glabrous, and the petals are yellow to cream.

**Etymology**: This new species is named in honor of the collector, Dr. Vicki A. Funk, Curator of Botany, Smithsonian Institution.

**Acknowledgements**: We are grateful to David Lellinger for assisting with the Latin diagnosis and to him, Racine Foster, John Kress, Harry Luther, Robert Read, and Harold Robinson for reviewing the manuscript.

## Reference:

Smith, L.B.; Downs, R.J. Pitcairnioideae. Flora Neotropica. Monograph no. 14, pt. 1. New York: Hafner Press; 1977.

## New Books

*A Preliminary Listing of all Known Cultivar and Grex Names for the Bromeliaceae*, compiled by Don Beadle. 249 p., 28 cm. Soft cover, plastic (Velo) bound. June 1991. Order from Don Beadle, BSI Cultivar Registrar, P.O. Box 81464, Corpus Christi, TX 78468-1464. \$20.00 postpaid. Make checks payable in U.S. dollars to BSI.

The Bromeliad Society, Inc. is recognized by the International Society for Horticultural Sciences as the International Registration Authority for Bromeliad Cultivars and Hybrids. As such, the society is required to publish this register or checklist. Credit must be given to the many dedicated people who, since publication of the 1979 BSI checklist, produced specialized compilations that are now combined in this one database.

Don Beadle was elected BSI registrar in 1988. He has worked since then to gather, verify, match, and collate bromeliad cultivar and hybrid information including at least 17 elements of data now available in this list.

The list is arranged in alphabetical order by genera, cultivar, or grex names. It also lists unnamed grexes, names of collectors, hybridizers and developers. It cites formulas, reference sources, dates, and cross-references. It includes the cultivars of species, for example:

*Aechmea fasciata* (cultivars): 'Auslese', 'Checkers', 'Ivory', 'Leucadia', 'Silver King' (see 'Aton'), & 'White Head'.

With Harry Luther's *Alphabetical List of Bromeliad Binomials* (June 1990 and revised in March 1991) and this checklist, all bromeliad specialists and hobbyists of whatever degree of training, interest, and experience now have available authoritative bromeliad names. Mr. Luther says that his list is a spelling guide. Mr. Beadle denies that his list is intended to influence show classification specialists. These documents may not be authorities for other than the intended purposes but they are very useful guides.

Errors in compilations of almost any length will leap from the pages as soon as the binder has finished his work. At the same time various people for various reasons will take exception to something. Let's hope that the careful reader as well as the exception-taker will be swift to advise these compilers of errors egregious or innocuous for the sake of adding to the present levels of excellence.

At \$20.00 this checklist costs eight cents a page. If you are planning to cultivate more than one bromeliad you need a copy.—TUL

*Growing Bromeliads*, by The Bromeliad Society of Australia, Inc., edited by Barry E. Williams. 2nd ed. 112 p., color and b&w illus; 24 cm; 1990. Soft cover. Address orders from the United States and Canada to International Specialized Book Service, 5602 N.E. Hassalo St., Portland, OR 97213; telephone 800-547-7734. Credit cards accepted. Price: \$14.95 plus \$3.00 shipping and handling. If outside the United States and Canada, write to the publisher: Kangaroo Press, Pty., Ltd., 3 Whitehall Road (P.O. Box 75) Kenthurst, N.S.W. 2156, Australia.

We reviewed the first edition of *Growing Bromeliads* in the September–October 1989 issue of the *Journal* (p. 208–209) and recommended it for hobbyists and bromeliad society libraries. Before this second edition was published, C. Helm in Kent, England, and Timber Press, Portland, Oregon, produced essentially the same book (see review, January–February 1991 *Journal* (p. 29–30) at about twice the price. We recommended the new book also but with reservations.

This Australian edition of *Growing Bromeliads* was written, illustrated, and edited by 18 members of the B.S.A. for the average bromeliad grower. It is arranged in 20 chapters. The first four provide general information about bromeliads: where they come from, how they were introduced into horticulture; a description of the entire family; advice on where and how hobbyists can grow them. There are ten chapters dedicated to information about the most common genera. The remaining six chapters discuss a wide variety of topics including lesser known genera, propagation, biology, variegation, pests and diseases.

Now you can get a copy of what amounts to a corrected reprint of the 1989 edition. It is still the best available general guide for the bromeliad hobbyists. It has its faults but they are of no great consequence. The price is reasonable when you consider that we have had no new handbooks of this scope since Victoria Padilla's *Bromeliads*, published in 1973.<sup>1</sup>

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We must note as an act of loyalty that The Bromeliad Society, Inc. *Bromeliads; a Cultural Handbook* (1977) is still available at \$3.60 postpaid from BSI Publications Sales, 709 E. Sheridan, Newberg, OR 97132. Our *Handbook* is still a very useful guide and a complement to *Growing Bromeliads*.

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Still another book, but one in the planning stage, is an introductory handbook of bromeliad culture that we hope to have ready for the 1992 world bromeliad conference in Tampa. It will be a primer designed for the anxious beginner in the bromeliad hobby. We shall keep you informed.—TUL

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<sup>1</sup> Available from Sheldance Nursery, 2000 Cabrillo Hwy., Pacifica, CA 94044 at \$14.95 plus \$2.00 first class postage and handling.

## Capturing *Aechmea castelnavii*

Chester Skotak

*Aechmea castelnavii* Baker grows on the Pacific coast of Costa Rica and ranges south down to Bolivia. It is not common in Costa Rica but can be found from the Río Tarcoles south to the Peninsula de Osa. It is a very attractive plant, a steel gray urn with an inflorescence up to two feet in length and with watermelon pink bracts.

Every time we had seen this plant it was growing on the tops of the tallest and least accessible trees in the forest. We would drive by scratching our heads and wondering how we could collect a specimen.

The day arrived that we decided to go and get a plant. With a fishing rod and reel, a 30-30 rifle, and 80 pieces of 1" x 4" wood plus a few pounds of nails we were off. After six hours of driving, we located our prey in a giant of a tree with 60 feet of shear trunk overhanging a raging river.

We decided first on the rod and reel with a heavy sinker and proceeded to cast a line around a specimen. The result was lots of monofilament line and sinkers being wrapped around the tree but with the plant intact.

I won't confess that we did with the rifle but will go on to the 80 pieces of wood. We laboriously nailed a ladder up the side of the tree hoping to get close enough to bring one down. With not even 10 feet more to go, we had an earth tremor. Try to imagine being 70 feet up a tree during an earthquake. Down we came and in short order lead a discussion on why man was not meant to climb trees. *Aechmea castelnavii* was intact. We did not collect anything that day. Sometimes the forest does win.

Several months later, I was driving by the same area. There stood our tree with ladder almost to the top, so much fishing line that it looked like a rhipsalis cactus hanging down. The aechmea we were after was not there. It had fallen in a miraculous manner by the side of the river. I brought the plant home and within a month it was in full flower and that is how Jeffrey Block got the photograph shown on the back cover.

The next time you are looking at your bromeliads, remember that there is probably more of a story in the collecting of the plant than just a label can tell.

*Alajuela, Costa Rica*

## Charles A. Wiley (1905–1980), Honorary Trustee

Charles A. Wiley was elected an honorary trustee of The Bromeliad Society, Inc. by the Board of Directors at its regular meeting, 15 June 1991. It is a matter of curiosity and regret that this posthumous honor was not decided on years ago.

Mr. Wiley was president of the BSI from July 1969 through June 1971 and served as director from 1972 through 1978. He contributed many articles to the *Journal*, one of which, "Water and Good Growing," we reprinted recently. He was a founder of the South Bay Bromeliad Associates, a lecturer, a promoter of bromeliad shows as a means of public education. The 1982 World Bromeliad Conference was dedicated to his memory in recognition of his many contributions to the development and promotion of bromeliad knowledge.

Many people remember Charles Wiley for his ability to grow plants to perfection, for his humor and enthusiasm. They also treasure his hybrids such as *Neoregelia* 'Francis', 'Heather', 'Joland', and 'Rosy Pink'.—TUL

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The German Bromeliad Society (Die Deutsche Bromeliengesellschaft) has been publishing its bulletin *Die Bromelie* for 21 years. The BSI Library file, maintained by the editor begins with 1982, no. 3. The bulletin is published three times a year. It now has 26 pages including text, color and black and white illustrations, drawings, maps, and English summaries.

The articles in the first issue of 1991, for example, include such topics as descriptions of new species, a discussion of cryptanthus culture, a recommendation for greater interest in vrieseas, the continuation of Walter Till's dissertation on *Tillandsia* subgenus *Diaphoranthema*, and a reprint from the *Journal*.

The recent addition of English summaries makes the material more accessible to people not fluent in German. Even without the summaries it is possible to follow much of the information because we use similar botanical terminology. Reading *Die Bromelie* is a good way to develop a greater awareness of activities. The German Bromeliad Society with its more than 200 members is an energetic group providing its editor with a wide source of information.

Write for subscription information to the editor: Klaus-Dieter Ehlers, Herrenbergerstrasse 14, W-7000 Stuttgart 80, Federal Republic of Germany.



## Regional Reflections

### Notes on *Tillandsia duratii* var. *duratii* and *T. duratii* var. *saxatilis*

Fascinating species of *Tillandsia*. When young they are a raggle-taggle mass of randomly curled, stiff, gray, narrow leaves about the size of a California grapefruit. Please remember that there are three distinct varieties: var. *duratii*, var. *confusa*, and var. *saxatilis*. I am going to ignore the *confusa* variety because I don't know anything about it. The *saxatilis* variety was called *decomposita* and I still call it by that name.

Out of the mass of the randomly tangled leaves comes a scape. Up to that point it is just about impossible to tell one variety from the other.

The differences become visible when further growth starts. The *duratii* variety seems to stand still with a scape about four inches long surrounded by the whorl of leaves. The *saxatilis* variety scape grows to a quite astonishing length with floral bracts curving outward.

I have a hot tub on my patio that is heated to 102 degrees F day and night. I have my *Tillandsia duratii* hung from a framework over the tub, Variety *saxatilis* situated nearby bloomed in just six months. I was thrilled.

I have a little trouble buying both varieties. My vendor pretends to know the differences between the two but, the last time I purchased, I bought twenty-eight of which four were var. *duratii* and the rest var. *saxatilis*. Thank goodness they weren't expensive. I do have a few extra *saxatilis* if anybody gets the urge.

Gerson Jules Velick  
3457 Maplewood Avenue, Los Angeles, CA 90066

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A recent aerogram from Harry Martin, our honorary trustee from New Zealand, informs us that "Bea Hanson (she turned 80 not long ago) started up a tillandsia study group some time ago. It is still flourishing—we find it most enjoyable every third Sunday morning." Bea served the Bromeliad Society of New Zealand as editor for more than twenty years and was joyful with her release from deadlines when she retired some months ago. Since then, as elected patron and life member of her society, she has contributed at least a page to most issues of the NZ bulletin. Her interest in bromeliads, her energy and leadership must be noted. We have enjoyed her friendship and benefitted from the many articles that she has contributed to the *Journal* and those of hers that we have borrowed. We wish her many more happy and productive years.—TUL

## Notes on Photographing Bromeliads

Jim Buckley uses a blue velvet background and always makes sure the background is uncluttered. He suggests: 1) use Ektachrome film to bring out the green color; 2) look into neos, look at billbergias, pot and all, to show form; 3) place tillandsias on a pedestal; 4) folds of fabric give the impression of a basket.

Reprinted from Star to Star,  
February 1985, Friends of Star to Star, Corpus Christi, TX

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### Tillandsia Mix

Our "Pot Pourri" for potted tillandsias is mixed in a concrete mixer and then stored in drums, which saves mixing every time you want to pot up a plant. It is an open mix that drains well and seems to be working well for us. It is:

3 parts Sequoia bark (small)  
½ pts charcoal  
¼ pts perlite  
2 pts tree fern fibre  
½ pts Dynamic Lifter  
¼ pts polystyrene beads (small)

Once you pot the plant you can add some hoof & horn, blood and bone, and a few slow release fertilizer pellets. This will save you having to spray-fertilizer which is very time consuming. For pots that topple because of this light mix, it helps to place a stone or rubble in the base of the pot.

Reprinted from the Bromeliad Newsletter  
Bromeliad Society of New South Wales, January 1990

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### Making An Inflorescence Last

Take an *Aechmea fasciata* with the spike just emerging and place the plant in hot, dry conditions. The spike could last two months and dry off but still remain pink. Take another of the same into cool, shady, damp conditions and it will last twelve months in full color after which it will brown off and then lose color.

This applies to all bromeliad spikes. The life of the inflorescence is in your hands. Give the plant plenty of heat, humidity, water, and food for producing the first sign of the spike, then slow down maturity by cooling off.

*Aechmea fasciata* and *A. bracteata* will stay in full head for a year. *A. mexicana* and *A. lueddemanniana* for half that time. *Tillandsia flabellata* and *Portea*

*petropolitana* var. *extensa* can last in color for six months, or their color can be reduced to a brief few weeks.

The spike of a healthy, well-nourished plant, of course, will last much longer than a sickly one because Nature can work longer to mature the fruit or seed and in so doing the seed is more likely to be fertile.

W.B. Charley

Reprinted from *BSI Bulletin*, March–April 1965.

## On Winter Flowering

Andrew Flower

In the July–August 1990 issue of the *Journal of the Bromeliad Society* there is an article, originating in Queensland, which offers a suggestion for over-wintering tank bromeliads. The advice given is, in a way, the opposite of what I do—so it would be helpful to hear what any other growers from cold areas (i.e., where air temperatures regularly drop to between 0 and 5 degrees C through winter), do in this respect.

As I mentioned in the May 1989 *Bulletin*, my watering essentially ceases from May through September with the only exception being to keep a minimum of water in the centers of the tank broms to avoid funneling. Spraying of water on the leaves is never attempted, but there is some condensation drip only leaves when a fine day follows a frosty night.

The *BSI Journal* article, however, says, "...Tank bromeliads will suffer from stress if the tanks are without water for any appreciable time. The solution for growers in areas with cold winters is to fog the leaves frequently with a fine spray but to leave the tanks dry."

In contrast, then I leave the leaves strictly dry and keep a little water in the cups. Perhaps this is a hangup I have because of all the orchids I grow in with the broms, and wetting the orchids during winter causes them to rot off at a great rate!

Do others spray the leaves in winter? My strategy seems to work, and many species which I think should be hard to maintain in the 0 to 5 degree C range come through the winters pretty well, such as *Aechmea orlandiana* and *A. mexicana*, a Costa Rican tank tillandsia, and *Vriesea hieroglyphica*. I would be interested in what others do because if I am watering the wrong way round then my plants would be better off if I spray the leaves, but I don't want to make a mistake and have them rotting off, either. Guidance, please!

Reprinted from *Bromeliad Society of New Zealand Bulletin*, December 1990. Please reply in care of the editor.

## Questions & Answers

### Conducted by Derek Butcher

All readers are invited to send their questions and observations about growing bromeliads as a hobby to the editor. Answers will be sent directly to you and some questions will be published.

#### Q. When is the best time to sow bromeliad seed?

- A. Most bromeliad seed has a short life span and you should sow it as soon as received even though conditions may not be optimum.

In the wild, seasonal conditions undoubtedly trigger seed ripening and dispersal because all seed must have moisture to germinate. One can imagine the problems with tillandsias if rain came before wind dispersal. Think of the problems with the berried fruits if they ripened in the middle of the dry season. So, if you have habitat-collected seed and you live on the same side of the equator with similar climatic conditions, it should be very easy to grow these seed. If you live on the opposite side of the equator, with all other things being equal, should you wait six months? The problem is that you won't know now old the seed really is. Remembering that the seed was collected from its home site, there is a good chance of high germination because it was cross-pollinated.

Seed from cultivated plants has been produced under much different conditions including climatic and you might expect more self-pollinated seed, or, perhaps, hybrid seed. With these, the best time to sow is more clouded and you might do well to wait for late spring or autumn than to chance very hot or cold temperatures.

There are many hints and much information on how to grow seed but little is known about when to start the seed. My advice is to sow immediately if you can provide an affable climate or the next spring or autumn if you cannot.

#### Q. Does wood used in a mix lose its acidity?

- A. All mixes lose their acidity and it can happen slowly if you use rain water or quickly if your water supply contains a high proportion of salts. The use of ground-up wood or chips in a potting mix is a controversial subject. Wood needs extra nitrogen to help it decompose. In the process, you could rob your plant of this valuable element.

The use of bark is a different proposition and it has been found to be a useful substitute for peat. As the price of peat moss went up, the interest in bark increased.

**Q. Where can I get bromeliad seed other than through the Seed Fund?**

- A. The choice is very limited unless you want commercial quantities of the more popular bromeliads. In that case, you would need to contact the larger nurseries in the United States, Brazil, or Western Europe. Cactus and succulent seed suppliers sometimes have rarities but that is generally a hit-or-miss method. Another possibility is your local bromeliad club.

I have had success with pen-friends who live in bromeliad habitat areas. They are conservation-minded and may need the encouragement to carry on the conservation education. Postage may become an expense item but you will feel better for having helped the cause. Correct naming will depend on the knowledge of your friend but it will probably be species and not hybrid seed (unless a natural hybrid) and you will know where it was gathered.

Remember, there is a lot of waiting and inconvenience in preparing bromeliad seed, but it is surprising what can be done if a lot of people do just a little. Remember also that you may need a seed import license.

**Q. How do you distinguish among *Nidularium rutilans*, *N. regelioides*, and *N. Leprosa*?**

- A. *Nidularium rutilans* and *N. regelioides* are recognised species but *N. Leprosa* was a bit harder to find. The only reference available was Brian Smith's *Manuscript of Bromeliad Hybrids and Cultivars* where *N. Leprosa* is listed as a hybrid of *N. regelioides* and *N. rosulatum*. I must point out that Brian gleaned his information from official lists and nursery catalogues. It is a sad reflection on the aims of our society when some hybrids occur only in nursery catalogues.

I wonder if the plant that caused the question was a clone of the original hybrid or an F2 seedling? If a seedling, it would not be *N. Leprosa* but a plant with affinities to either parent. Being a hybrid, identification would be very difficult.

Let us look at the two species. *Nidularium rutilans* was named in 1885 and *N. regelioides* in 1898. At one time, *N. rutilans* was reduced to synonymy under *N. regelioides*. Now we consider them separate but closely related. The main difference seems to be that the floral bracts are entire (smooth) in *N. rutilans* but serrate (toothed) in *N. regelioides*.

**THE BROMELIAD SOCIETY, INC. FINANCIAL REPORT**

**1/1/90 through 12/31/90**

**June 27, 1991**

**BALANCE SHEET AS OF 12/31/90**

	12/31/89	12/31/90
<b>CURRENT ASSETS:</b>		
Cash – Texas Commerce Bank	18,065.44	14,577.43
Cash – General Fund Special	39,523.19	54,795.33
Cash – Life Memberships Spec.	10,036.89	10,751.13
Cash – Padilla Research Spec.		2,597.36
Cash – Padilla Endowment Spec.		-68.17
Cash – Coast Savings	8,536.13	
<b>TOTAL CASH:</b>	<b>76,161.65</b>	<b>82,653.08</b>
<b>ADVANCES:</b>		
1992 World Bromeliad Conf.		1,000.00
Steckler	200.00	200.00
Musleh	375.00	375.00
Navetta	100.00	100.00
Beltz	200.00	200.00
<b>TOTAL ADVANCES:</b>	<b>875.00</b>	<b>1,875.00</b>
<b>FIXED ASSETS:</b>		
Library and Equipment	4,348.39	4,348.39
Less Depreciation	2,089.54	2,089.54
<b>TOTAL DEPRECIATED ASSETS:</b>	<b>2,258.85</b>	<b>2,258.85</b>
Investments – Unisys	200.00	200.00
Investments – USTN		10,020.31
Inventory	52,497.00	52,497.00
<b>TOTAL NET WORTH:</b>	<b>131,992.50</b>	<b>149,504.24</b>
<b>BANKS:</b>		
Texas Commerce Bank	Merrill Lynch	
Friendswood, Texas	Houston, Texas	
Account 0055517	Account 582-07J70	

**FINANCIAL STATEMENT – 1990**

Balance – Checking Acct 1/1/90	18,065.44
Recd. from G. Reid 1/4/90	8,536.13
Transfer to BIC	-5,180.02
Cash Available 1/04/90	21,421.55



# RECEIPTS:

Advertising – Journal	5,770.00	
Advertising – Roster	25.00	
Back Issues	2,482.92	
BIC	463.00	
Color Fund	1,263.71	
Cultural Sheets	656.03	
Dividends	4.50	
Donations	294.75	
Interest	4,097.27	
Judges Certification	65.00	
Medallions & Trophies	2,118.37	
Memberships	37,304.09	
Postage	140.76	
Publications	7,048.18	
Seed Fund	842.39	
Slide Program	340.00	
Padilla Research	2,600.00	
Padilla Endowment	<u>10,000.00</u>	75,515.97

# DISBURSEMENTS:

Administrative Exp.	42.61	
Affiliate Newsletter	206.59	
Bank Charges	54.22	
Cultural Sheets	20.00	
BSI Meetings	484.27	
Grants	1,472.00	
Journal – Envelopes	841.40	
Journal – Allowance	1,800.00	
Journal – Mail Service	6,749.44	
Journal – Misc.	1,764.40	
Journal – Typesetting	8,500.00	
Journal – Printing & Photos	<u>20,517.27</u>	40,172.51
Judges Certification	192.01	
Membership – Contract	5,400.00	
Membership – Expenses	<u>1,886.49</u>	7,286.49
Publications	969.03	
Seed Fund	658.87	
Slide Program	511.83	
Treasurers Expense	7.17	
Contingency:		
Refund S. Oleson	15.71	
Ballots	<u>267.90</u>	283.61
		-52,361.21

# TRANSFERS – NON INCOME ITEMS

Padilla Research Fund	2,500.00	
Padilla Endowment Fund	<u>10,000.00</u>	-12,500.00

EXCESS INCOME OVER EXPENSES 10,654.76

# TRANSFERS – INCOME/EXPENSE ITEMS

To BIC	-463.00	
Special Acct. Gen. Fund	-12,000.00	
Cr. Special Acct. – Interest	-4,097.27	
Chg. Special Acct. – Bank Chg.	<u>61.39</u>	-16,498.88

1992 World Conference Advance -1,000.00

Cash Balance Checking Account 14,577.43

# GENERAL FUND

Balance 1/1/90	—
Received from Greg Reid 1/4/90	39,523.19
Interest for year 1990	3,322.58
Transfer from Checking Account	12,000.00
Bank Charges and/or Expenses	<u>-50.44</u>

Balance 12/31/90 54,795.33

# LIFE MEMBERSHIP

Balance 1/1/90	—
Received from Greg Reid 1/4/90	10,036.89
Interest for year 1990	725.19
Bank Charges and/or Expenses	<u>-10.95</u>

Balance 12/31/90 10,751.13

# PADILLA RESEARCH FUND

Balance 1/1/90	—
1990 World Conference Auction	2,500.00
Interest for year 1990	<u>97.36</u>

Balance 12/31/90 2,597.36

# PADILLA ENDOWMENT FUND

Balance 1/1/90	—
BSSF Donation	10,000.00
Purchase of Treasury Note	-10,020.31
Interest for year 1990	<u>-47.86</u>

Balance 12/31/90 -68.17

# BROMELIAD IDENTIFICATION

Balance 1/1/90	—
Received from Greg Reid 1/4/90	10,015.31
BSSF Auction	11,487.00
BSSF Interest	525.09
BSSF Expenses	-4,290.57
BSSF Luther Expenses	-2,763.00
Transfer from BSI	<u>221.50</u>
BSI Luther Expenses	5,180.02
Copy Machine	-5,108.00
1990 WBC Auction	-2,195.00
Interest for year 1990	11,857.00
Bank Charges and/or Expenses	1,359.06
Transfer from BSI 1990	<u>-10.93</u>
	463.00

Balance 12/31/90 21,560.46

**THE BROMELIAD SOCIETY, INC. FINANCIAL REPORT  
BUDGETS - 1991 and 1992 - APPROVED**

	1991*	1992**
<b>RECEIPTS:</b>		
Advertising - Journal	6,000.00	6,000.00
Advertising - Roster	—	—
Back Issues	2,500.00	2,500.00
Color Fund	1,000.00	1,000.00
Cultural Sheets	700.00	850.00
Dividends	6.00	6.00
Interest	6,000.00	6,000.00
Judges Certification	100.00	100.00
Medallions & Trophies	2,000.00	—
Memberships	40,000.00	42,000.00
Postage Refund	200.00	200.00
Seed Fund	900.00	900.00
Slide Program	400.00	400.00
Donations	500.00	500.00
Publications	7,000.00	8,000.00
Padilla Research	500.00	500.00
Cultivar Book/Reg.	500.00	2,000.00
<b>TOTAL RECEIPTS:</b>	<b>68,306.00</b>	<b>70,956.00</b>
<b>DISBURSEMENTS:</b>		
Affiliate Newsletter	250.00	300.00
Administrative Expense	200.00	200.00
Bank Charges	100.00	100.00
Computer Upgrade	2,000.00	—
Cultivar Book/Reg.	2,500.00	—
Cultural Sheets	1,900.00	—
Depreciation	—	—
BSI Meetings	500.00	500.00
Franchise Tax	10.00	10.00
Grants	2,500.00	2,500.00
Journal - Allowance	1,800.00	1,800.00
Journal - Envelopes	—	900.00
Journal - Mail Service	7,875.00	6,600.00
Journal - Misc.	2,400.00	2,400.00
Journal - Printing & Photos	20,900.00	23,000.00
Journal - Typesetting	7,300.00	7,300.00
Judges Certification	200.00	200.00
Medallions/Trophies	3,000.00	3,000.00
Membership - Contract	5,400.00	5,400.00
Membership - Expenses	2,500.00	2,500.00
President Expense	200.00	200.00
Publications	1,500.00	1,000.00
Roster	3,000.00	—
Secretary Expense	200.00	200.00
Seed Fund	700.00	700.00
Slide Program	300.00	300.00
Treasurers Expense	200.00	200.00
Contingency Fund	1,500.00	1,500.00
<b>TOTAL EXPENDITURES:</b>	<b>68,935.00</b>	<b>60,810.00</b>
Reserves	-629.00	10,146.00
<b>TOTALS:</b>	<b>68,306.00</b>	<b>70,956.00</b>

\*Amended 15 June 1991  
\*\*Approved 15 June 1991

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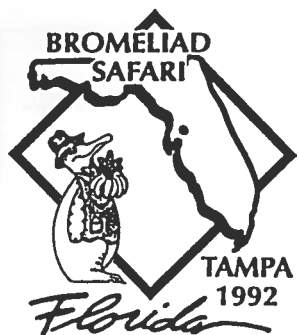


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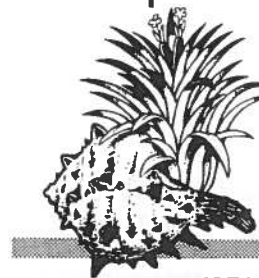
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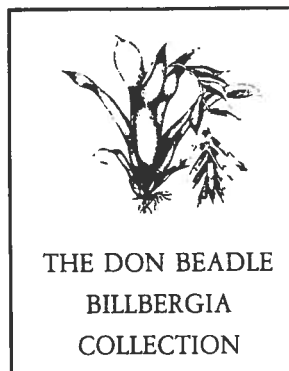
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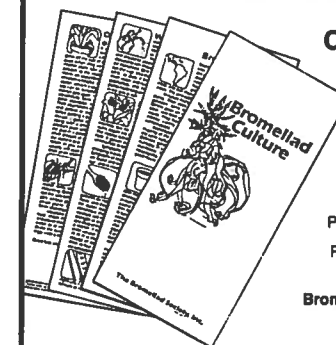
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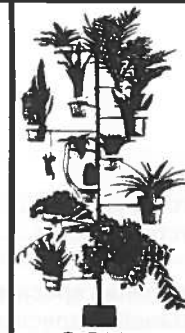
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Jeffrey Block

*Aechmea castelnavii*. A large plant with leaves about three feet (6-11 dm) long and an attractive inflorescence ranges from Costa Rica, where this specimen was captured, to Bolivia. Please see page 218 for the collector's report.

## Calendar of Shows

- 28-29 September River Ridge Bromeliad Society annual show and sale. City Park Botanical Gardens, 200 Victory Avenue, New Orleans, LA. Sale hours: 10:00 a.m.-5:00 p.m., Saturday & Sunday; Show Hours: 1:00-5:00 p.m. Saturday and 10:00 a.m.-5:00 p.m. Sunday. Pat & Joe Chaisson 504-764-6693.
- 12-13 October Sarasota Bromeliad Society 11th Annual Show and Sale cosponsored with Marie Selby Botanical Gardens. At the gardens, 811 South Palm Avenue, Sarasota, FL. Special reduced admission price. Wally Berg 813-924-0060.
- 26-27 October Southwest Bromeliad Guild Show. Zilker Park Garden Center, Austin, Texas.
- 9-10 November Caloosahatchee Bromeliad Society annual show and sale, "Carnival of Bromeliads." Exhibition Hall, corner of Hendry St. and Edwards Drive, Fort Myers, FL. Saturday, 9 a.m.-6 p.m.; Sunday, 10 a.m.-4 p.m. Friday, 8 Nov. 8:30-11 a.m. plant entries, judging 1-6 p.m. Betty Ann Prevatt 813-334-0242, Gene McKenzie 813-997-6392. Open to the public, admission free.
- 11-14 June 1992 World Bromeliad Conference sponsored by The Bromeliad Guild of Tampa Bay, Inc., The Florida Council of Bromeliad Societies, Inc., and The Bromeliad Society, Inc.. Saddlebrook, Tampa, Florida. Tom Wolfe, General Chairman, 813-961-1475.

Please send 1991 show and related notices to reach the editor on or before 9 September. The deadline for January-February 1992 is 4 November.