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Cover photographs. Front: *Tillandsia funckiana* var. *recurvifolia*. The photograph is by Werner Rauh and his description is on page 116. Back: *Tillandsia porongoensis*, a new species from Argentina described (page 103) and photographed by Lotte Hromadnik and Peter Schneider.

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Some Rare Tillandsias of Jamaica

Jürg Rutschmann

Five centuries of over-exploitation and especially the increasing population pressure in the last few decades have destroyed most of the original vegetation cover of the Caribbean islands. In Jamaica, one of the last regions showing a relatively undisturbed flora, is the Cockpit Country in the north-central part of the island. This area has been saved by the topography and geology, which make it quite unattractive even for a primitive kind of agriculture. There are only a few, rough tracks and apart from the periphery, no settlements. In colonial times, this wilderness was the haunt of runaway slaves who maintained a precarious independence there for long periods.

The Cockpit Country is about 250 square miles of karst, a heavily eroded limestone formation consisting of steep, partly towerlike, craggy hills and deep valley bottoms and sinkholes. There are no surface water courses. The rough terrain is covered by dense, low forest and scrub. There are many endemic species such as the showy *Portlandia coccinia* (Rubiaceae), superficially similar to a rhododendron, the "Jamaica rose" *Balkea trinerva* (Melastomataceae) and *Euphorbia punicea*, a deciduous shrub with large, scarlet inflorescences. Here is also the preferred breeding ground of the "Doctor bird," the long-tailed

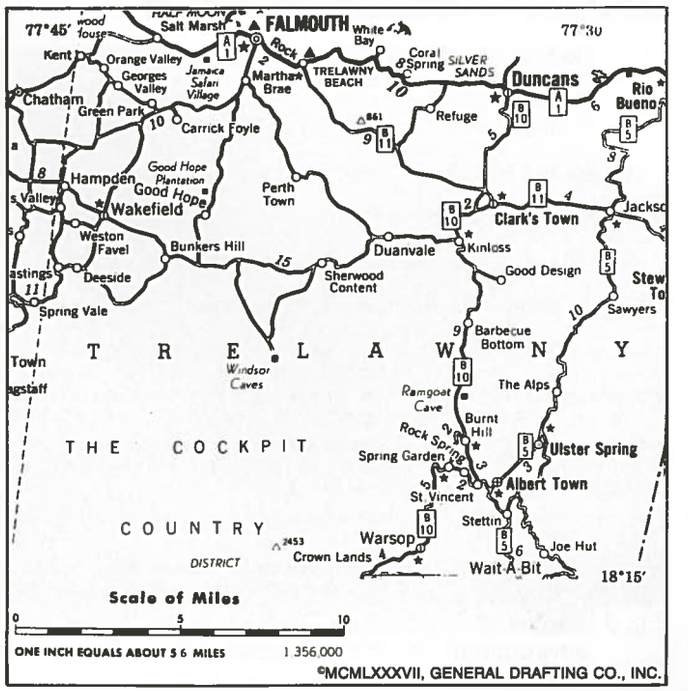


Fig. 1
The Cockpit Country of Jamaica

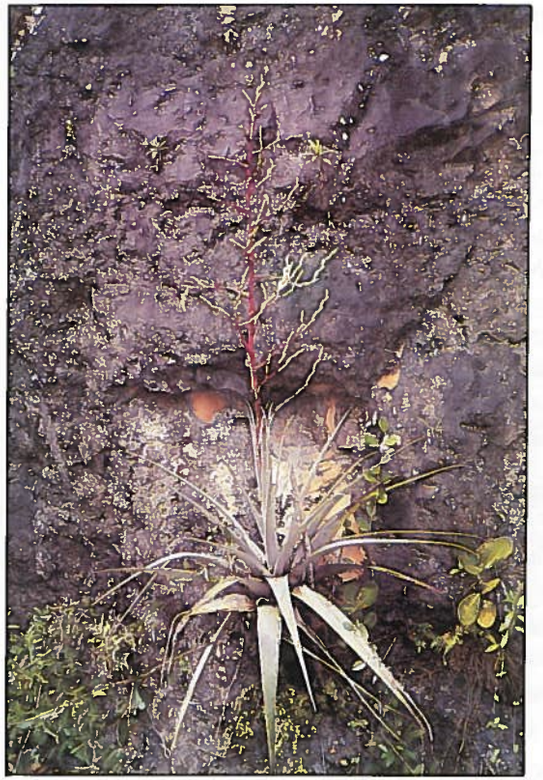


Fig. 2
Tillandsia calcicola L.B. Smith & Proctor

photos by the author

Fig. 3 Habitat of *T. calcicola*. The top of the hill is similar to the environment in which *T. adamsii* and *T. canescens* have been found.

Fig. 4.
Tillandsia adamsii R.W. Read

Fig. 5
Tillandsia canescens Swartz

hummingbird, and of the Jamaican tody, a dwarf relative of the kingfishers looking like a wren in emerald and red.

In this environment, some notable tillandsias are found. Two of the three species presented here, *Tillandsia calcicola* and *T. adamsii*, are endemic to this part of Jamaica, the third, *T. canescens*, has also been found in probably similar habitats in Cuba, but it has not been mentioned in reports by recent visitors to that island.[1] As far as I am aware, none of these species has been previously presented in this journal.

Tillandsia calcicola L.B. Smith & Proctor, 1968 (fig. 2), is a large plant with leathery, rather stiff grey leaves and an inflorescence similar to that of the related *T. utriculata*. It grows on vertical limestone cliff faces (fig. 3) exposed to the sun at least part of the day at altitudes of 400–600 m. As with most saxicolous tillandsias, it produces many offsets when young, whereas the mature plant dies after flowering without forming an offshoot. There are several stands around the Cockpit that are inaccessible and not exposed to fire damage, so that the species seems not to be acutely endangered at the moment.

T. adamsii R. W. Read, 1974 (fig. 4), and *T. canescens* Swartz, 1788(!) (fig. 5), in contrast to the former species grow in shaded places on the top of the highest hills on limestone crags and ledges at about 700 m. On the neighboring trees the giant form of *T. bulbosa* and *T. compressa* are frequent. There are also large vrieseas growing on the ground.

T. adamsii is a rather tender, small (less than 35 cm), semibulbous, grey-green plant with a simple, decurved, pink spike and violet flowers. *T. canescens* is even smaller with narrower, stiffer leaves and a bright red inflorescence with 1–3 spikes and pale blue to whitish petals. On numerous excursions I have found each of these plants in only one single place. As even in Cockpit Country mountainsides are increasingly cleared by fire for yam cultivation, which often also destroys adjacent unusable cliff and mountain top habitats, these two taxa are probably on the brink of extinction.

Cultivation of these three tillandsias is not particularly difficult if a temperature around 20 degrees C, sufficient humidity, and, for *T. calcicola*, much light can be given. I am trying to propagate *T. adamsii* by seed; *T. canescens* has not up to now set seed, but produces offshoots freely.

For more detailed descriptions of these unusual tillandsias, the interested reader is referred to L. B. Smith & R. J. Downs, Tillandsioideae, Flora Neotropica monograph no. 14, pt. 2, pages 959, 960, and 970.

Oberwil/Basle, Switzerland

1. J. Brom. Soc. 37:170–172; 1987.

Tillandsia porongoensis, a New Species from Argentina

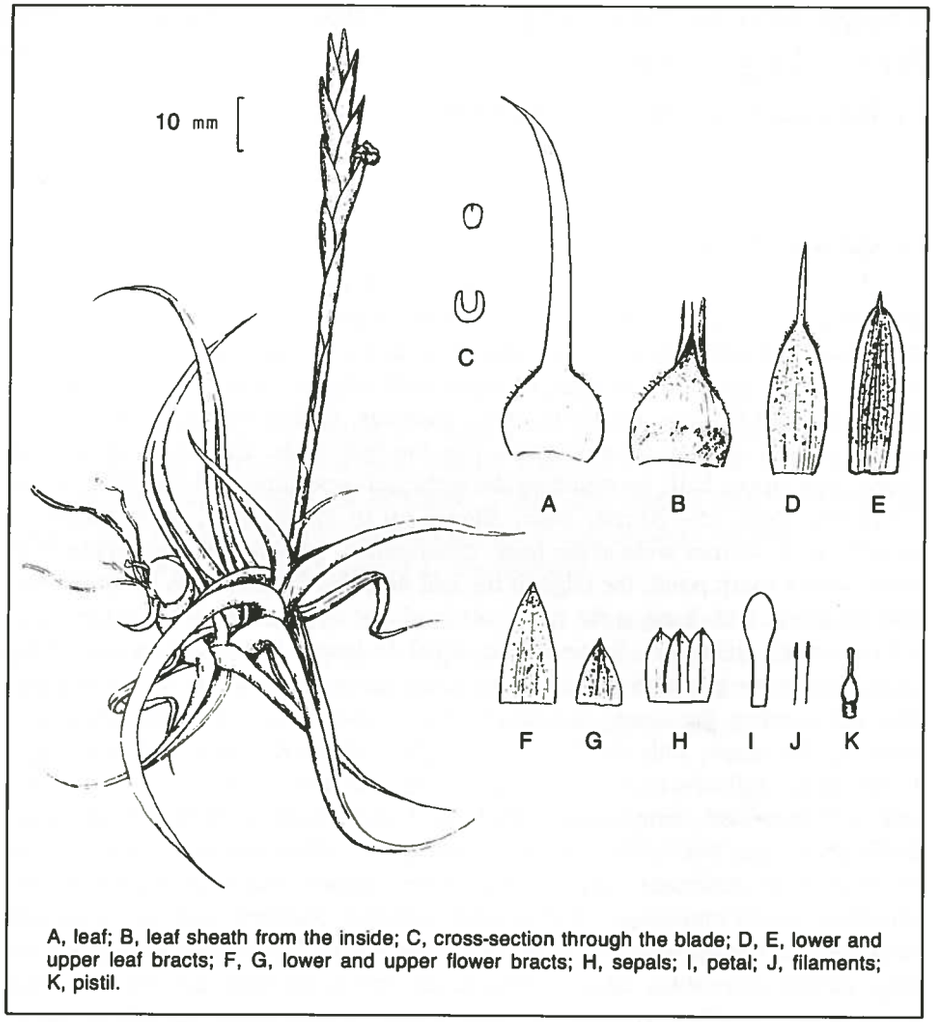
L. Hromadnik and P. Schneider

***Tillandsia porongoensis* sp. nov.**

Plant elliptic, caulescent, leaves few, polystichous, up to 15 cm in bloom, stem arched, hardly branched (fig. 6 and photograph on p. 144). *Leaves* narrowly triangular, spreading to recurved, rigid, succulent, strongly involute, awl-like at the tip, acute, pungent, densely covered with silvery white, rather adpressed scales. *Sheaths* distinct, adaxially even, glabrous, cherry red up to one half its length, abaxial surface paler in spots, like the leaf blades densely covered with scales in the upper half, surrounding the stem and concealing it, triangularly oval, 12–15 mm long, 15–20 mm wide. *Blades* up to 12 cm long, recurved into a semicircle, 8–10 mm wide at the base, canaliculate, awl-shaped from about midpoint, with a sharp point, the edge of the leaf near the sheath and in its upper portion equipped with long scale hairs. *Axis of the inflorescence* 4.5–5 cm long, 1.5 mm wide, glabrous. *Scape bracts* equal in length to the internodes of the scape, less densely scaled abaxially, adaxially glabrous, straw yellow, the lower ones surrounding the scape and subfoliaceous, the upper ones completely surrounding the scape, only the tip flares slightly, distinctly veined, 32 mm long, 9 mm wide. *Inflorescence* simple, distichous, narrowly lanceolate, 4–4.5 cm long, 7–9 mm wide, complanate, with 4 to 8 erect flowers, pedicels 1.5 mm long, rachis geniculate, not visible, naked, quadrangular, internodes 4 mm long. *Floral bracts* densely imbricate, covering the rachis, upper ones very short (10 mm) otherwise 16–20 mm long, 10 mm wide, pointed, leathery, nerved, ecarinate, tinted reddish brown, abaxially densely equipped with dish-shaped scale hairs, interior naked, straw-like. *Sepals* longitudinally oval, pointed, 12–14 mm long, 4 mm wide, very low connate, nerved, leathery, posteriorly slightly carinate, straw-like, glabrous; abaxially glabrous in the lower half, reddish brown, the upper half covered densely with scales. *Petals* 20 mm long, 2–3 mm wide, with blade 5 mm wide, blunt, oval, recurved, yellowish brown. *Filaments* white, ribbon-like, straight, 0.3 mm wide, 10 mm long. *Anthers* 1.5 mm long, enclosed in the flower, which is tube-shaped at the bottom. *Ovary* longitudinally oval, 4 mm long, 2.5 mm wide. *Style* somewhat thinner than the ovary, with *stigma* 8 mm long.

Holotype. Argentina. Depto. La Rioja, in the Sierra de Porongo, south of Malanzan, 850 msm, leg. *H. and L. Hromadnik 7321* 1981 (WU).

Habitat and distribution. This plant is found very rarely and only in lone specimens on the sides of large boulders where it grows along with the saxicolous form of *Tillandsia gilliesii* Baker (or *T. caliginosa* W. Till) var. *saxicola* (nom. nud.)



A, leaf; B, leaf sheath from the inside; C, cross-section through the blade; D, E, lower and upper leaf bracts; F, G, lower and upper flower bracts; H, sepals; I, petal; J, filaments; K, pistil.

the authors

Fig. 6 Tillandsia porongoensis is a new species from Argentina. It was found at medium altitude, scattered sites on the Sierra de Porongo, Depto. La Rioja.

and other tillandsias in the surrounding dry forest: *T. lorentziana* Grisebach, *T. duratii* Visiani var. *saxatilis* (Hassler) L. B. Smith, *T. capillaris* Ruiz & Pavon, and others.

Tillandsia porongoensis has been known up to now only from this one very isolated mountain range where it is found at sites up to 30 km apart. According to the key by L. B. Smith and R. J. Downs (1977), one arrives at *T. incarnata* H.B.K. ranging from Venezuela to Ecuador, or *T. lepidosepala* L. B. Smith from Mexico, with which our plant, however, bears no relationship.

Tillandsia porongoensis, subgenus *Phytarrhiza,* is reminiscent of *T. gilliesii* var. *saxicola* (nom. nud.), which grows exclusively on cliffs in this same area. It differs from the latter in the leaf shape and in the polystichous leaf arrangement as well as in essential flower characteristics: a multifloral inflorescence, densely imbricate, larger flower bracts, larger, longitudinally oval, pointed, keeled sepals equally and briefly fused at the base, shorter petals with distinctly formed plate.

The assumption that this is a smaller form of *T. duratii* var. *saxatilis,* also found at this site, can be excluded. In the latter, the leaves are awl-like, the sepals are lanceolate, not pointed, unkeeled, naked, only the rear ones somewhat fused, and the rachis is visible.

Should *Tillandsia porongoensis* prove to be a hybrid *(T. duratii* var. *saxatilis* × *T. gilliesii* var. *saxicola* nom. nud.) it would be, to the best of our knowledge, the first and only natural cross of a species from the subgenus *Diaphoranthema* with a species of another subgenus of *Tillandsia.*

Note: The original description with Latin diagnosis by Dr. W. Till was published in Haussknechtia, v. 4187; 4/1988. We thank Dr. Till for his assistance.

Kritzendorf, Austria
Greiz, German Democratic Republic

Literature cited:

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

Acknowledgment:

The editor thanks Harvey L. Kendall for the English translation.

NOTICE OF BSI BOARD OF DIRECTORS MEETING. The annual meeting of the Board of Directors will be held at the Le Meridien-Newport Beach, 4500 MacArthur Blvd., Newport Beach, CA, May 19-20-21. This will be an open meeting. Members are invited to forward mattters for consideration by the Board to the president before the meeting date.

A Tribute to Amy Jean Gilmartin (1932-1989)

G.S. Varadarajan

The bromeliad world is faced with a severe loss in the death of Professor Amy Jean Gilmartin. After a courageous struggle with cancer, she died on February 10, 1989. Her loss is felt especially by the people who were fortunate enough to have worked with her and to have known at close hand the excitement and integrity with which she pursued science. She was one of our foremost researchers in the Bromeliaceae.

Amy Jean was born in Red Bluff, California, on October 15, 1932. She obtained her undergraduate education at Pomona College, California, and M.S. and Ph.D. degrees from the University of Hawaii. Her postdoctoral work was done at the Smithsonian Institution.

Dr. Gilmartin was the director of the Marion Ownbey Herbarium and a member of the botany faculty at Washington State University for nearly fifteen years. In her career, she held several curatorial and teaching positions in the United States and abroad. She was the chairperson of the Department of Botany, Universidad de Guayaquil, where she founded the herbarium. She was a vice-president of the California Botanical Society in which she later became a member of the editorial board. She had been a director of The Bromeliad Society, Inc. and had served on administrative and advisory committees of many professional societies. Dr. Gilmartin was the major thesis advisor for sixteen M.S. and Ph.D. students. A recipient of a senior Fulbright Fellowship, she taught an intensive course on numerical taxonomy in Colombia. As a principal investigator, she received eight major research grants during the past sixteen years.

Dr. Gilmartin will be remembered by her colleagues and students especially for her research in the Bromeliaceae. Beginning with her doctoral study, much of her work has provided valuable insight into the bromeliad flora of Ecuador. Her *Bromeliaceae of Ecuador* was first published in 1972. She was revising that study in collaboration with Mr. Harry E. Luther, Selby Botanical Gardens, when shedied. She contributed taxonomic studies to the *Flora of Galapagos*, and the *Flora of Honduras*, and described in her work several new species of bromeliads. Her field investigations included expeditions to the Galapagos Islands, several regions of mainland Ecuador, and research-teaching in Baja California.

Her research reflects an increased commitment to the understanding of systematic and evolutionary aspects of bromeliads, especially in the Tillandsioideae subfamily. In recent years, she and Dr. Gregory K. Brown, University of

Wyoming, launched an international research project on bromeliads. This project operates with the collaboration of a network of field participants in various Latin American countries who provide plant samples and field data.

Amy Jean was a notably pleasant person to work with. She was a generous advisor and superior teacher. Her advice in student research reflected her thorough understanding of background literature and methodologies which, in turn, helped the student develop a solid foundation for approaching a research problem. The breadth of her knowledge and her skill are legendary. It is most unfortunate that the botanical, and specifically, the bromeliad worlds have lost such a very fine researcher, writer, administrator, plant collector. She was a good friend. Her strength of character and her immense achievements will remain an inspiration.

In commemoration of her life, the Amy Jean Gilmartin Fund for Botanical Systematic Research has been established at Washington State University.

Harvard University Herbaria
Cambridge, Massachusetts

Guzmania eduardii: Additional Notes

The beautiful cover photo of *Guzmania eduardii* in the March-April issue of the *Journal of the Bromeliad Society* appears to be the first in color of this species. It is cultivated sparingly in Florida and California.

The range of *Guzmania eduardii* is now known to include western Ecuador as well as Colombia. It has been collected recently at several sites in the provinces of Cotopaxi and Pinchincha at elevations ranging from 600–900 m, always in dense, wet forests. Companions include *Tillandsia cornuta, Guzmania hitchcockiana, G. remyi,* and the "extinct" orchid *Epidendrum ilense.*

Harry E. Luther
BIC, Selby Gardens, Sarasota, Florida

There have been unusual demands for space in this issue of the *Journal* with the sad news of Dr. Amy Jean Gilmartin's death, the notice of the election of new officers, the long-awaited cultivar registration proposals, and the overdue list of judges. As a result, the long-drawn-out Dutrie series must be put off until the next issue when it will be concluded and the seed-to-seed reprint will be continued. We used to blame the exigencies of the Service for unforseen changes but now we recognize the inevitability of human events.—Ed.

Progress Report on Cultivar Registration

Don Beadle

The Bromeliad Society, Inc. is the International Registration Authority for the Bromeliaceae. The responsibilities of that appointment include: 1) registering cultivar names for the bromeliad family, and 2) compiling and publishing an international register of all known cultivar names used for bromeliads.

These responsibilities were on my mind when I volunteered to serve as cultivar registrar and chair the Cultivar Registration Committee, but they were not my only concern. The people who grow, collect, trade in, and hybridize the bromeliad have long needed a system for identifying, cataloging, and documenting both the bromeliads we already grow and the new ones constantly being introduced. We decided that we could offer a solution for this problem and perform the duties of an International Registration Authority at the same time by the use of a computer database program. This database will list all the bromeliad cultivars in cultivation today, or in the past, with all available information included for each plant.

This information will include both general and coded, precise descriptions, parentage, hybridizing records, historical and cultural notes, and photographs. Eventually, this material will be available to any BSI member in many different forms. Compiling this information has proved to be a job of considerable magnitude.

Some of the information we will include exists in the literature, the BSI *Journal* and in registration lists already compiled, but most of what we need is still in the minds of the people who grow the bromeliad. How quickly and how well the database grows depends on how quickly and how well we can coax the information from all of you. You are all members of the committee and you shall all benefit from the work we do together.

The process of registering cultivars and publishing a Cultivar Register is described in the *International Code of Nomenclature for Cultivated Plants—1980.* These rules are of necessity designed to cover the naming and registering of all cultivated plants whatever their form, culture, or mode of reproduction.

The BSI is charged with registering and listing "cultivars" with a cultivar defined by the Code as follows:

> An assemblage of cultivated plants which is clearly distinguished by any characters (morphological, physiological, cytological, chemical, or others), and which, when reproduced (sexually or asexually), retains its distinguishing characters.

When I first read this definition I realized that I had developed a different definition for the term cultivar, as had every one from whom I sought advice and counsel. No two of us had the same definition. We are required, however, to name and register cultivars and must decide among ourselves what constitutes a *bromeliad* cultivar, and to agree to use that definition in order to communicate clearly with each other. As growers, collectors, and hybridizers we want and need the assurance that all plants with the same name are the same plant except for the temporary differences caused by cultural conditions. It is our suggestion that we accept the term cultivar as it applies to the bromeliad as meaning "any bromeliad that can be recognized as unique by its individual characteristics and which reproduces itself exactly through offsets."

This interpretation is not in disagreement with the definition stated in the Cultivated Code and allows the majority of us to visualize immediately what constitutes a cultivar. It then follows that a cultivar may be any of the following: 1) A selected clone of a hybrid grex, 2) A unique form of a known bromeliad species, and 3) A bromeliad of unknown origin, either species or hybrid.

With this definition in mind, we have studied all of the good information available from published lists and from the *Journal.* From this material, we have assembled a tentative list of all cultivars believed to be in cultivation today. This preliminary list is being sent to all hybridizers of record for their help in beginning the database we mean to build. When their information is obtained we will have a more complete and accurate list that will be distributed to the BSI membership within the next year.

You will be asked to inventory your collections by indicating which of the listed plants you are growing. You will also be asked to add any cultivars not included in the list. When these lists are returned and collated, your committee will compile an official list which will then be published as The Bromeliad Cultivar Register. Publishing this register will constitute official registration of the included cultivars. We are planning to have the register ready for publication in less than two years.

Registration of new cultivars is now ready to proceed. The committee has prepared new forms and instructions for their use. You may get copies by writing to me at the address appearing at the end of this article.

The compiling of information for the database will never be completed. There will always be new material to add and old information to change or update. As new and better photographs of the existing cultivars are obtained, they will be added to the database. Information on culture, awards, history, taxonomical data, and other appropriate material will be added as it is obtained. This is to be a living record of our devotion to the bromeliad, compiled by ourselves, for ourselves.

We solicit your comments, criticisms, and support. Let us know your reaction by writing to the:

BSI Cultivar Registration Committee
Don Beadle, Registrar
P. O. Box 81464
Corpus Christi, TX 78468-1464.

THE INTERNATIONAL BROMELIAD SOCIETY? It's no wonder that members understand BSI to mean Bromeliad Society International (instead of Incorporated) when you consider that our members live all over the world. We have received in recent weeks evidence of their interest in the form of two gifts to the BSI Library.

Don and Alice Woods, who live in Perth, sent a copy of the November 1988 issue of *Your Garden* with nine very fine color pictures illustrating an article about their large collection of bromeliads. All perfect specimens in spite of the extremes of temperature and rainfall on the southwestern coast of Australia. The author of the article, Philip Powell, thoughtfully included Don's recommended 10 bromeliads for beginners. This is the kind of reporting that encourages interest.

Johann Brachner, a member from Edling, West Germany, who operates a nursery specializing in orchids and bromeliads, has just sent us a copy of the January 1989 *Mein schöner Garten* containing an article, "Just Like Living in a Rainforest (my translation)." Six pages of color pictures beautifully composed show 25 species and hybrids as well as large displays. There is also Johann building a cork tree with PVC pipe core. Beautifully arranged and photographed. —TUL

CONGRATULATIONS TO KLAUS-DIETER EHLERS on his accepting the editorship of *Die Bromelie*, the journal of our affiliate, the Deutsche Bromeliengesellschaft. Herr Ehlers succeeds Aja Coester, who died last March. Klaus and Renate Ehlers have travelled frequently to Mexico and have collected extensively. Renate has described a number of their discoveries in *Die Bromelie* and in the *Journal*. The German bromeliad society is among the largest affiliates with more than 200 members. We wish Klaus well. All newsletter editors will understand. —TUL

WE ACKNOWLEDGE WITH THANKS the most generous gift to the *Journal* color fund made recently by **Anne Collings**, a member of the Caloosahatchee Bromeliad Society, Fort Myers, Florida. —TUL

Tillandsia andreana and *Tillandsia funckiana* Compared

Text and illustrations by Werner Rauh

Two of the most beautiful and attractive small tillandsias, much favoured by amateurs and *Tillandsia* collectors, are *Tillandsia andreana* E. Morren ex André and *T. funckiana* Baker. The former was described by E. Morren and pictured in André's *Bromeliaceae andreanae* (Paris, 1889), plate XXIX B. The latter was published by J.G. Baker in his *Handbook of the Bromeliaceae* (London, 1889), page 196. In spite of these facts, L.B. Smith and R.J. Downs recognize only one species, namely *T. andreana* and regard *T. funckiana* as synonymous with it.[1] Francisco Oliva follows with his beautiful book, *Bromeliaceae of Venezuela* (Caracas, 1987) and describes only *T. andreana*, but the accompanying photographs on page 214 and 215 show *T. funckiana* from Venezuela.

On the other hand, the well-known but prematurely deceased German tillandsia collector, Alfred Blass stated that *Tillandsia andreana* and *T. funckiana* are two different and distinct species. He published a note to that effect in the *Journal of the Bromeliad Society* but it seems that his note has been forgotten.[2,3] Accordingly, we have decided to demonstrate once more the difference between the two species on the bases of material collected in Colombia in the type locality and in Venezuela in the dry valley of the Rio Chama near Mérida and at Las Trincheras on the way to Puerto Cabello (fig. 7).

***Tillandsia andreana* E. Morren ex André**

Plant stemless or with a very short stem, branching from the base and forming clumps, flowering up to 9 cm high (fig. 8, 9). *Leaves* numerous, in a 9-cm high and 10-cm broad rosette. *Sheaths* conspicuous, ovate, 1 cm long, 1 cm wide, light brown lepidote on both sides. *Blades* filiform, 6–7 cm long, 2 mm wide above the sheath, canaliculate, long attenuate, erect in the lower half and then curved outwards; young leaves erect, densely lepidote on both sides; scales with a green center, the younger ones somewhat rose colored. Flowers single, terminal, shorter than the rosette leaves, 4–5 cm long, erect or somewhat curved. *Scape* lacking, but the inner rosette leaves at flowering time are red and below the calyx there are 4–5 pale scape-like bracts. *Sepals* long lanceolate, 1.5–6 2 cm long, 1 cm wide at the base, free, subcarinate at the base. *Petals* lingulate, erect, obtuse, somewhat recurving at apex, dark cinnabar. *Stamens and style* included. *Filaments* thin, plicate, orange-yellow; *style* yellowish with spreading stigmas. *Capsules* 5—6 cm long, straight or somewhat curved. Flowering time (in Europe) June–July.

1. Tillandsioideae. Flora Neotropica monogr. 14, pt. 2 (New York: Hafner Press. 1977), p. 910.
2. Vol. 27: 160–162; 1977.
3. C.S. Gardner reached a similar conclusion in her dissertation, A Systematic Study of *Tillandsia* Subgenus *Tillandsia* (College Station: Texas A&M Univ., 1982), p. 211, etc.

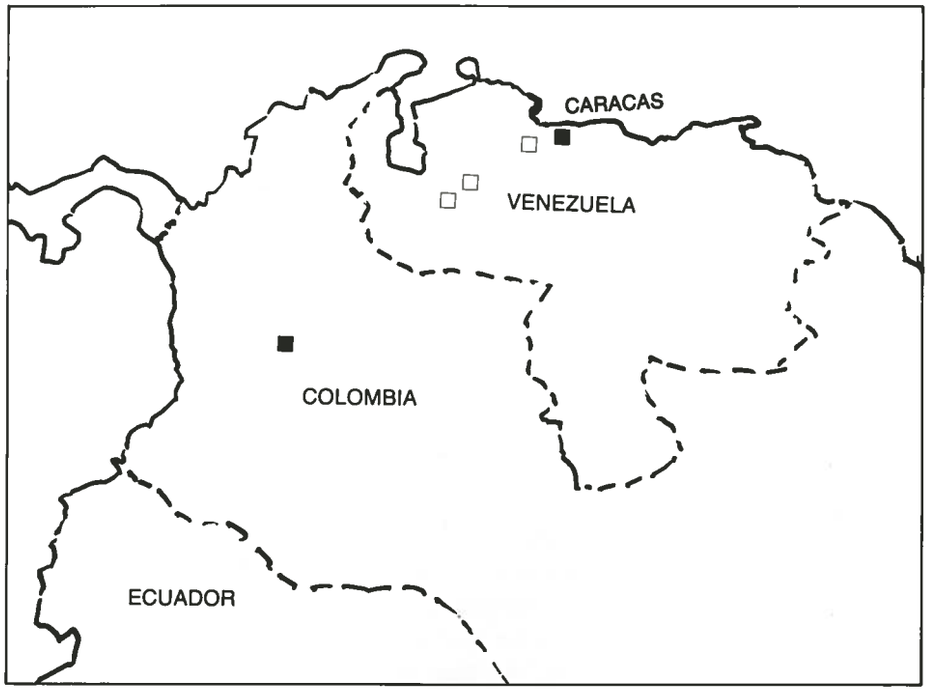


Fig. 7
Geographic distribution map of *Tillandsia andreana* ■ and *Tillandsia funckiana* □.

Collection number. B.G.H. 68 031, cultivated in the Botanical Garden of the University of Heidelberg.

Distribution. Norte de Santander, Colombia, epiphytic on trees at an altitude of 1500–1700 m in a cloud forest.

Type locality. *[André 1762* (Feb. 1876)]; Río de la Honda, near the bridge of Icononzo, Pandi, Cundinamarca, Colombia.

Further collections: *Foster & Smith 1476,* Manaure, Prov. Magdalena; *Maria 2558,* Gramalote (Cucuta), Prov. Norte de Santander; *Foster 1884,* Río Icononza, Prov. Tolima.

Tillandsia andreana is self-fertile. André himself, who discovered this beautiful species, did not see these plants in flower but only when they were in fruit. He put the plant into the subgenus *Pitrophyllum* (Beer) Baker (= subgen. *Tillandsia),* but according to the flower structure, *T. andreana* would fit traditionally the subgenus *Anoplophytum* (Beer) Baker.

***Tillandsia funckiana* Baker, 1889**

The following original diagnosis by Baker in his *Handbook of the Bromeliaceae,* page 196, is very short:

> Leafy stem produced to a length of 5–6 in., densely beset with rigid, linear-subulate ascending leaves 1½ in. long 1/12 in. broad above the dilated base, densely laxly lepidote all over (fig. 10). Peduncle very short. Spike laxly 2–3 flowered; flower bracts oblong-lancelate, bright red, ⅓ in. long. Calyx as long as the flower-bract; sepals red, acute. Petals white, half as long again as the calyx.

Type. *Funk* et *Schlim 1258,* 1846.

Distribution. Saxicolous on dry rock walls of the Río Chama, Laderas de San Pablo, near Mérida, Venezuela.

The following description is based on material collected in the dry valley of the Río Chama, near the Puenta Real (southwest of Mérida), *Rauh 59 051.*

Plant long caulescent, richly branched and forming compact cushions, clumps or long clusters, often bright red from the influence of intensive sunshine. *Stems* thin, seldom more than 5 mm thick, densely covered with spirally arranged leaves (fig. 10). *Sheaths* distinct, triangular ovate, 0.5 cm long, 0.5 cm wide, with adpressed, cinereous to brownish scales on both sides, glabrous and white at the base. *Blades* erect to recurved, variable in their length, mostly up to 2.5 cm long, 2 mm wide, filiform-attenuate, strongly keeled below, apical leaves becoming bright red at flowering time (fig. 10). *Inflorescence* terminal, mostly consisting of one single terminal flower, rarely two (fig. 10, left). *Scape* none; upper leaves below the calyx pale, consisting mostly only of the sheath, forming a kind of involucrum below the flower; these up to 6 cm long (with the exserted stamens), erect, slightly zygomorphic (fig. 11). *Sepals* elliptic-ovate, up to 15 mm long, 6 mm wide, obtuse, free, chartaceous, pale green, ecarinate. *Petals* lingulate, up to 5 cm long, recurved for 1 cm, bright red[4] (fig. 11). *Filaments* red, straight, curved at the apex; *style* red, curved at apex with 3 spreading stigmas, these somewhat longer than the anthers. *Capsule* 3–4 cm long.

Distribution. *T. funckiana* grows mostly on dry rock walls in the valley of the Río Chama, near Mérida, exposed to full sun. Enrique Graf, Caracas, found only one specimen growing as an epiphyte on trees in the region of Barinas. It is characterized by thick stems and silver-gray, spreading to recurved leaves.

Trincheras is a very isolated locality about 600 km by air from Mérida on the way to Puerto Cabello, Prov. Carabobo, near the Caribbean Sea where it was first found in 1938 by *Alston,* no *5716.* Enrique Graf re-collected the plant in the same locality and he reports that the locality, also dry rocks, is full of snakes. He has never seen so many snakes in Venezuela as in Las Trincheras.

4. We cannot understand why Baker writes that the petals are white. We found only red-flowering plants. Furthermore, Baker does not note in his diagnosis that stamens and style are exserted.

Fig. 8.
Tillandsia andreana, flowering plant (B.G.H. 68031); natural size 9 cm.

Photos by author

Fig. 9. Tillandsia andreana, flower enlarged. Note that the stamens and style do not project from the corolla.

Fig. 10.
Tillandsia funckiana, flowering plant.

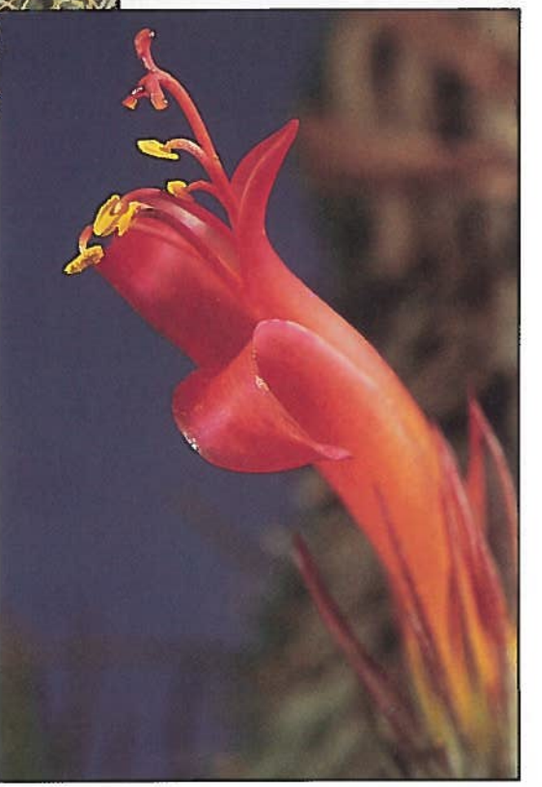


Fig. 11
Tillandsia funckiana, flower enlarged.

In contrast with *Tillandsia andreana, T. funckiana* is self-sterile and when in cultivation produces fruits only with pollination by specimens of different clones. The flowers, typical hummingbird (colibri) flowers, last several days.

We conclude that *Tillandsia funckiana* and *T. andreana* are two different and distinct species belonging to two different subgenera: *T. andreana* to the subgenus *Anoplophytum* (stamens included with plicate filaments; style slender, longer than the ovary); *T. funckiana* to the subgenus *Tillandsia* (stamens and style long exserted, filaments straight.

While *Tillandsia andreana* is very uniform and not variable concerning its habit and its growth form,[5] *T. funckiana* is a very variable species. In the Heidelberg Botanical Garden, we cultivate forms with long and short leaves, forms with silver-gray leaf blades (densely lepidote) and some with green blades (with fewer scales) with thin and thicker stems (fig. 12). But these are only forms and not worth being described as distinct varieties; they all grow on rocks in the provinces of Mérida and Carabobo.

There is one form, of which the locality is not known, that differs from all the other forms of *T. funckiana* by the strongly recurved leaves. It was named "recurvifolia" by A. Blass (fig. 12, lower right; photograph on front cover).

Tillandsia funckiana* Baker var. *recurvifolia* A. Blass ex Rauh *var. nov.

Differt a typo var. *funckiana* ramis crassis et foliis griseis valde recurvatis.

Holotypus. B.G.H. 64 687, in herb. inst. bot. system. univ. heidelb. (HEID).

Patria et distributio. Probabilis in valle Río Chama, prov. Mérida, Venezuela.

Stems very thick, densely covered with silver-gray leaves, strongly recurved in their upper half to one side (Fig. 10, lower right and front cover).

Holotype. B.G.H. 64 587, in Herb. Inst. System. Bot. Univ. Heidelberg (HEID).

Distribution. Probably in the valley of the Río Chama, Prov. Mérida, Venezuela.

The variety *recurvifolia* A. Blass in cultivation forms big clumps and is lazy in producing flowers in the European climate.

5. A. Blass (1977, p. 161) mentions that he has two different clones in cultivation: one is distinguished by having leaves covered with silvery green scales, the other being rather rare, has yellowish green leaves and the leaves have fewer scales.

Fig. 12

Tillandsia funckiana, different growth forms from the region of Mérida. Above left: form with thin stems and erect, green, short leaves (B.G.H. 59 057); above right: form with silver-gray and elongated leaves (B.G.H. 64 600); below left: form with thick stems and silver-gray leaves (B.G.H. 57 569); below right: *T. funckiana* var. *recurvifolia* A. Blass (B.G.H. 64 687).

The table shows again the differences between *Tillandsia andreana* and *T. funckiana:*

Table. 1. Differences between *Tillandsia andreana* and *T. funckiana*

	T. andreana	*T. funckiana*
Distribution	epiphytic, only in Colombia	saxicolous, seldom epiphytic, only in Venezuela
Growth-form	stemless, forming compact rosettes	long caulescent, forming cushions or clusters.
Leaves	blades up to 6 cm long; sheaths ± 1 cm long	blades up to 3–4 cm long, erect or recurved; sheaths ± 0.5 cm long
Flowers	nearly radial; petals only somewhat recurved at apex, forming a slightly curved tube, up to 4 cm long	zygomorphic; petals strong curved at apex, up to 6 cm long
Androeceum	stamens as long as the petals, not exserted; filaments plicate	stamens long exserted; filaments straight, curved at apex
Style	included, little shorter than the anthers	exserted, longer than the anthers
Fruits	up to 4–6 cm long	up to 3–4 cm long
Plant	self-fertile	self-sterile

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Heidelberg, West Germany

Glory in the Middle of May

Racine Foster

A casual stroll to the shade house, one day in May, became a visit of much botanical excitement. A blob of color at the apex of a plain, green, tubular plant was like a sudden shout that stops one cold. The color acted as a spotlight on the once quiescent, sleeping giant, *Billbergia magnifica,* which was now producing its flower display. What a sight!

My attention was rivetted there as the colorful patch was pushed up and out of the tubular plant. This mass of color, botanically known as scape bracts, serves as an umbrella over the emerging flower stalk, which at first is not seen. One must stand at attention and patiently wait for the action to happen. Then, while one stands transfixed, it seems that a little, hidden motor at the bottom of the flower stalk starts the action of pushing the bracts up to allow the flower stalk to swing downward, elongating visibly while you watch. It seems to be in a hurry. One must inspect it every few minutes to see the rapid production of this huge, pendent inflorescence drooping down two or three feet, huge in comparison to other

Fig. 13
The author with her "sleeping giant" in full bloom.

M.A. Spencer

billbergias. The spectacle is highlighted by luscious, watermelon pink bracts now open to their full seven- or eight-inch length.

The three-inch long, blue petals, while momentarily shielding the stamens are poised for the sudden watch spring action, which happens in a blink of the eye. Truly, a visual delight to see this phenomenon occur. You must look fast, like a hummingbird. And, come to think of it, maybe Nature rolls these petals back quickly for the fast-moving hummingbirds who zip in and out for nectar before other creatures sense that it is available. It seems those petals can't recoil fast enough to expose the extraordinarily long, three-inch stamens. Swinging in the breeze, they give a lacy effect to the inflorescence.

The watch spring agility is the outstanding and unique characteristic of this group of billbergias described botanically as subgenus *Helicoidea.*[1]

This billbergia might well have been named gigantea, so large are the leaves and so long is the inflorescence. The plant of *Billbergia magnifica* stands to three feet. The elephantine, shiny green leaves are three to four inches wide; they are edged with sturdy, conspicuous spines and have the crushed or indented effect midway up the leaf, like *Aechmea nudicaulis.*

Mulford and I collected this billbergia in Brazil in 1939 in the Santa Teresa area of Espírito Santo. We stopped short as we came upon a spectacular cluster of a huge plant. We stood in awe and almost reverence. The spent inflorescences and the cluster of old caudal stumps (the base of each former plant), which looked like hand carved door knobs, told us this was a billbergia.

These knobs are a curious characteristic occurring in *Billbergia porteana, meyeri, alfonsi-joannis,*[2] *rosea,* and *zebrina.* They remind one of the pseudobulb of the orchid *Phaius tankervilliae* and seemingly serve the same purpose—an energy reserve source for the new offshoot.

It was not in bloom at the time of collection, so we could not make a specimen, but we took a few small plants and waited a few years for them to bloom. In 1952, Dr. Smith informed us that the plant we had found was *Billbergia magnifica,* named by Mez in 1901.

In spite of all the praise and enthusiasm, there is a flaw in this magnificent billbergia. It must be the slowest growing billbergia on record! Whereas the bloom is in swift motion, the plant is in slow motion and wants to reproduce at its own slow, frustrating pace. After forty years I have only three mature plants and two small offsets.

Billbergia rosea or *B. braziliensis* are often thought to be the reigning monarchs of the billbergias, but they take second place once you have seen *B. magnifica* in all its regal glory.

Orlando, Florida

1. See Dr. Lyman Smith's article, "The Watch Spring Billbergias in Cultivation." Brom. Soc. Bull. 13:6–8; 1963.

2. J. Brom. Soc. 24: cover photo, description p. 145; 1974.

Novelties of *Puya* Molina (Pitcairnioideae), I: A New Species from Bolivia

G. S. Varadarajan

***Puya solomonii* G.S. Varadarajan, sp. nov.** (fig. 14)

Puya killipii Cuatrecasas, *P. lineata* Mez, *P. nitida* Mez similis in bracteis scapi brunneis nitidis late elliptico-ovatis coriaceis et serrulatis, sed in inflorescentia paniculati speciforma cylindricae 30 cm longa floribus valde aggregatis differt; *P. nutans* L. B. Smith et *P. venezuelana* L. B. Smith similis in scapo decurvato nutanti, sed in statura plantae totae scapi et inflorescentia bracteis scapi coriaceis brunneis nitidis, et inflorescentiae composita, differt.

Plants flowering and fruiting to nearly 1.5 m, growing in massive colonies of about five individuals in a clump; caulescent, stems 12–15 cm in diameter, branched and covered with remains of sheath. *Leaves* 10–15, lax, about 1 m long; sheaths orbicular to rounded, dark castaneous; blades not stiff, 3–3.5 cm wide, glabrous above and sparsely lepidote beneath, serrate; spines at least 3–5 cm apart from one another, slender 5 mm long, antrorse. *Scape* stout, decurved, 40–45 cm long, 2–3 cm in diameter, dark brown; lower scape bracts subfoliaceous, and the upper with an oblong-elliptic sheathing base and a reduced blade, scape bracts coriaceous, becoming rugose and lustrous at maturity. *Inflorescence* cylindrical, spiciform panicle, nutant, 30–35 cm long and up to 11 cm in diameter (in fruiting), branches globose, compact, nearly glabrous; primary bracts broadly ovate, denticulate, acuminate, 6.5 cm × 6 cm, conspicuously nerved, lustrous, dark brown, rugose, becoming brittle at maturity, glabrous, enclosing the dense, reduced lateral branches. *Flowers* erect, floral bracts 3.5 cm × 2 cm, nerved, lustrous, dark brown; pedicels stout, 2–3 mm long, glabrous. *Sepals* lanceolate, acute, nerved, 3 cm long, glabrous, ecarinate. *Petals* dark green, to 6 cm long. *Stamens* included, anthers versatile. *Ovary* superior, style one-sided, stigma conduplicate-spiral type. *Dehiscing capsules* expose lustrous, dark brown interior of the valves. *Seeds* very numerous, *Puya hamata*-type.

Type: Bolivia: Depto. La Paz, Prov. Murillo, 23.1 km north of the pass at the head of the Zongo valley, 16° 18′ S, 68° 07′ W; alt. 3050 m; May 1, 1987, *G. S. & Usha Varadarajan, and J. C. Solomon 1471* (holotype, GH; isotypes LPB, MO, US, WS). Paratype: from the same locality as other types; April 17, 1985, *J. C. Solomon 13395 (LPB, MO).*

Puya solomonii superficially resembles some Colombian species, namely, *P. killipii, P. lineata,* and *P. nitida.* They all share lustrous brown, broadly elliptic-ovate, coriaceous, serrulate to subentire scape bracts. However, the new species

Fig. 14.
Photograph of the type specimen of *Puya solomonii,* a new species from Bolivia.

differs from the others in a 30 cm-long, cylindrical, spiciform, paniculate inflorescence with highly compacted flowers. *Puya solomonii* is also similar to *P. nutans* and *P. venezuelana* in the decurved scape and nutant inflorescence (Fig. 15), but differs from them in the overall size of plants, scape and of the inflorescence, as well as in the lustrous, dark brown scape bracts, and compound inflorescence.

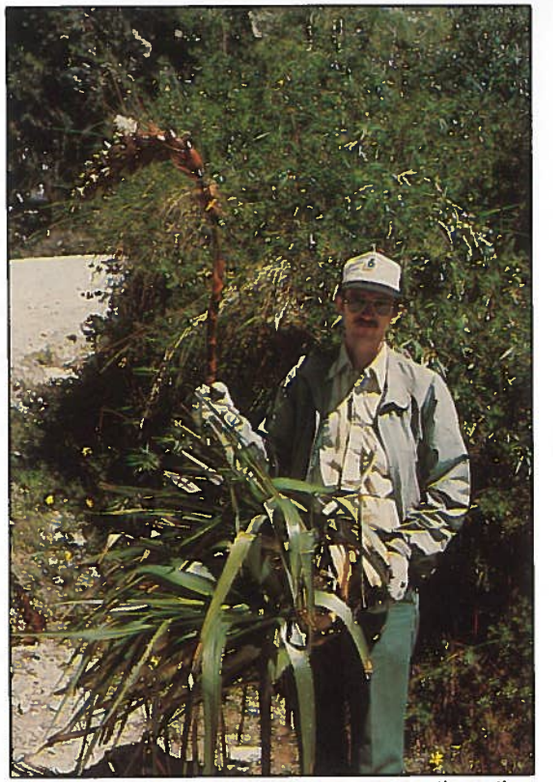

Fig. 15
Lax foliage, decurved scape, and nutant, cylindrical inflorescence are some of the conspicuous characteristics of *Puya solomonii.* Dr. James Solomon is shown holding the plant.

the author

The habitats of *P. solomonii* are restricted to moist, rocky slopes of an upper level, degraded, cloud forest vegetation characterized by *Baccaris, Hesperomeles, Myrsine, Eryngium* community. Populations of *P. solomonii* are locally common and appear to be allopatric throughout its distributional range in the Zongo valley.

I am especially delighted in naming this new *Puya* to honor a good friend and a very helpful field collaborator of mine, and a botanist, Dr. James Solomon.

ACKNOWLDGMENTS:

I acknowledge with gratitude the assistance of Dr. James Solomon during several of my field trips in Bolivia. I thank my wife Usha for her cooperation, support, and help in the field and in manuscript typing. I also thank Dr. Peter Stevens for the Latin diagnosis, and Dr. David Boufford for the help and facilities at the Harvard University Herbaria. My field explorations were supported by a National Geographic Society research grant (#3463-86).

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Election of Directors, 1989

Jerry Raack, Chairman, Nominations Committee

Ballots for the 1989 election of directors of the Bromeliad Society, Inc. are provided with this issue. You are urged to vote as one of your rights of membership. The Board of Directors is the governing body of this society and its future may well depend on the directors you choose. The election this year will be for directors serving a three-year term commencing January 1, 1990.

The society consists of 10 geographical regions and each region elects its own director(s). Each region is allowed one director for each five percent of the total membership and is guaranteed at least one director. Regions electing directors for the term 1990–1992 are:

California	2
Florida	1
International	2
Louisiana	1
Texas	1

The regions of California, Florida, Louisiana, and Texas include all members living in those states. The International Region includes all members living in areas other than Australia and the United States. **Only members who live in these regions may vote for directors in this election.**

PLEASE VOTE NOW and with careful consideration. You must return your ballot in the envelope provided. You must sign the outside of the envelope and the envelope must be postmarked no later than September 1, 1989 in order to be valid. The election results will be published in the *Journal.*

Pataskala, Ohio

BEA HANSON completed 26 years of service as editor of the *Bromeliad Society of New Zealand Bulletin* with the March 1989 issue and a new editor has taken over. When Victoria Padilla was still calling herself, "editorial secretary," Bea was in full swing. Her husband Snow says that her decision was overdue, but this editor will miss her fine hand. We wish her continued health and happiness. It will be interesting to see how long she will wait to find a new, creative activity. We offer our best wishes to our affiliate, the Bromeliad Society of New Zealand, and to the new editor. – TUL

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Judges Certification and Affiliate Shows Committees

The chairmen of the Judges Certification and Affiliate Shows Committees are elected annually by The Bromeliad Society, Inc. Board of Directors. Their names and addresses are listed in the directory of services and committee chairmen published on the next to the last page of the *Journal.* If you need help in writing show schedules or in contacting accredited judges you should call or write to these chairmen.

Society Members Compile "Pineapple" Book

Louis Wilson

About three years ago, we members of the South Eastern Michigan Bromeliad Society became convinced that we should do something to advance in some way the knowledge and enjoyment of bromeliads. We decided to compile a pineapple recipe book and now the book has become a reality.

We call it *Pineapple Cuisine—a Touch of Hospitality,* identifying the many uses of the only generally edible bromeliad and emphasizing the symbolism of the pineapple: hospitality. The book provides over 400 delicious hot and cold recipes including appetizers, salads, entrees, drinks, and desserts. As part of the fun of this project we even had a pot luck theme party using recipes found in the book.

Long before the book went to press, we decided that its real value would come from the use of the profits on the sale. We agreed unanimously that a portion of the profits should be donated to a worthy organization and then decided that the M.B. Foster Bromeliad Identification Center at the Marie Selby Botanical Gardens in Sarasota, Florida was just what we had in mind.

We invite you and your society to participate in our project by purchasing *Pineapple Cuisine.* We offer it singly or in quantity for resale as described in the accompanying advertisement.

East Lansing, Michigan

THERE COMES A TIME WHEN pride of possession is not enough and you want to know the name of that particular beauty. Try to remember that bromeliad identification is the function of the M.B. Foster Bromeliad Identification Center. Its resources are available to you. Sometimes there are questions such as: Is there any difference between *Nidularium rutilans* and *N. regelioides*? Why not send $5.00 to Harry Luther and find out? If you have unidentified plants (1) send the entire plant if it is small, or (2) send an entire leaf plus sheath, and the inflorescence including a fresh flower. If the inflorescence is very large, send a color slide with a branch of the inflorescence. A drawing of the plant would be helpful. Add your observations about the growing conditions even of your greenhouse. Wait until the danger of freezing is past before sending through the mail. Harry will reply. Send to: M.B. Foster Bromeliad Identification Center, Marie Selby Botanical Gardens, 811 South Palm Ave., Sarasota, FL 34236.

Misnamed Bromeliads, No. 4

Harry E. Luther

The *Tillandsia* species listed below are those that frequently are misnamed in horticulture. The wrong name is followed by the correct name. These name changes are the result of studies by several specialists. In some cases the changes are because an older, valid name has been discovered, in others the name applied to cultivated plants was simply wrong, and in certain cases species previously synonomized by previous specialists have been found to be distinct and worthy of recognition. These names changes have been published in a number of works and if anyone wishes the reference please request it from me.

Tillandsia benthamiana Klotzsch ex Baker =
Tillandsia erubescens Schlectendal
Tillandsia circinnata sensu hort. =
Tillandsia paucifolia Baker
Tillandsia fasciculata var. *rotundata* L.B. Smith =
Tillandsia rotundata (L.B. Smith) C.S. Gardner
Tillandsia fasciculata var. *venosispica* Mez=
Tillandsia buchii Urban OR *Tillandsia compressa* Bertero ex Schultes
2 distinct species have been lumped under this variety by past authors)
Tillandsia intumescens L.B. Smith =
Tillandsia langlasseana Mez
Tillandsia krusceana Matuda =
Tillandsia xerographica Rohwender
Tillandsia maritima Matuda =
Tillandsia roland-gosselinii Mez
Tillandsia mexicana L.B. Smith =
Tillandsia dugesii Baker
Tillandsia nubis Gilmartin =
Tillandsia hamaleana E. Morren
Tillandsia rosea Lindley =
Tillandsia stricta Solander ex Ker-Gawler
Tillandsia rosea sensu hort.
Tillandsia carminea Till
Tillandsia rutschmannii Rauh =
Tillandsia dyeriana André
Tillandsia valenzuelana A. Richards =
Tillandsia variabilis Schlectendal
Tillandsia velickiana L.B. Smith =
Tillandsia matudea L.B. Smith

Bromeliad growers are requested to forget the names in the first column as quickly as possible and use the correct names. Take correctly labelled examples to meetings and shows so that everyone can see the plants with their valid epithets.

M.B. Foster Bromeliad Identification Center
Marie Selby Botanical Gardens, Sarasota, Florida

Tillandsias

Paul T. Isley III and Herb Plever

Indoor Care

Tillandsias kept in the house longer than a month need to be watched closely until they establish themselves in an environment. They love fresh air, good light, and humidity—conditions often absent in the home. However, since tillandsias possess the ability to adapt to a wide range of climatic conditions, they will often grow (or at least not decline) indoors if they are given as much of their natural surroundings as possible.

Tillandsias kept in the house should receive plenty of strong light from a nearby window (preferably facing east, west, or south). If this is not practical, broad spectrum fluorescent lights provide 92% of actual sunlight when placed 15–30 cm. (that's approximately 6 to 12 inches) above the plants.

Watering is critical indoors since there is usually a lack of humidity, especially in homes or offices with air conditioning and/or central heating. A successful way to water the plants is to submerge them totally every week or two in a sink or bathtub in room-temperature water containing a small amount of fertilizer. They should remain submerged overnight or at least for a few hours. Soaking the plants in this manner will allow access to enough water to overcome any deficit.

Although the plants cannot respire while under water, submersion will not be critical unless extended for more than a day or so. At that point, the plants may suffocate for a lack of carbon dioxide and oxygen respiration. Misting also helps in dry conditions but should be done in addition to thorough soaking, not in lieu of it. In dry conditions, water misted onto a plant often evaporates before the plant has had the opportunity to absorb it. Even if it does absorb water misted on the epidermis, it may not be enough to overcome a water deficit. The plants will gradually dehydrate and may eventually die from a lack of moisture.

In a light, airy house, most tillandsias will adapt. In a stuffy, closed-in environment they may rot. Success varies from person to person, household to household, species to species, even plant to plant. If the plant thrives, terrific! One foolproof method for enjoying the plants indoors is to rotate them every month with plants that are growing in better conditions, i.e. outdoors or under wide-spectrum fluorescent lights.

Editorial Note (by Herb Plever)

The foregoing material was excerpted from *Tillandsia,* the beautiful and informative book by Paul Isley. As a leading nurseryman and grower, Paul knows his tillandsias. Yet, I believe he is unduly pessimistic (skeptical?) about our ability

to produce really vigorous, well-grown tillandsias indoors. He makes a very valuable contribution that tillandsias need a weekly or biweekly soaking to grow vigorously.

But unless you have only a few small plants, overnight soakings are not only a big bother, they're really not necessary. My collection of mounted tillandsias requires five full bathtubs to be fully soaked.

I have gone back to the soaking method that I practiced for some 20 years, and I have been doing this on a weekly to twice weekly basis. I soak the plants for 30–60 minutes (depending on my time and what else I'm doing at the time). I fill the bathtub with lukewarm water and drop in 3 tablespoons of fertilizer plus 2 droppers of Superthrive. Paul recommends a fertilizer with a 20-10-30 formula. I also use 30-10-10, 10-30-20, and 20-20-20, either separately or in combination.

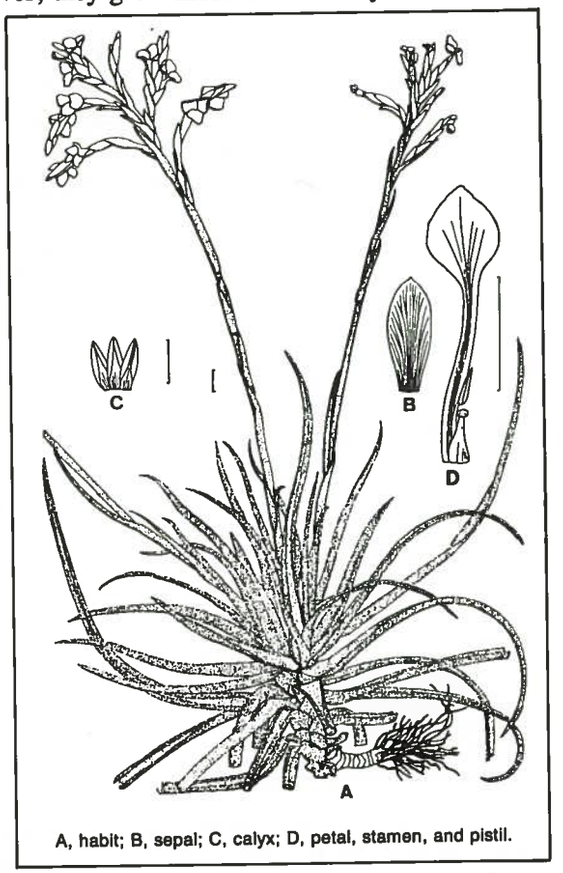
This procedure certainly produced great results. Not only do I find a startlingly rapid growth of my tillandsias, but they are producing multiple offsets and flowering very frequently.

I must also note that when I just sprayed my tillandsias heavily, they did a lot better than just not decline. However, they grew much more slowly and flowered and pupped less frequently.

If soaking is not to your liking, your tillandsias will do well mounted in a piece of tree fern placed on a capillary mat. The tree fern will stay evenly moist and the evaporating water from the mat and tray provides plenty of humidity which should be assisted by misting. Tillandsias grown in a pot of a porous mix also do quite well. In the latter two cases they produce a surprising amount of roots.

My tillandsias do get a lot of light, but I also have flowered *T. seleriana, T. oaxacana, T. narthecioides,* and others under relatively low light levels. It just takes a little longer to happen. I can state unequivocally that tillandsias make excellent houseplants, and I have hundreds of them to prove it.

[From Bromeliana, *The New York Bromeliad Society, Inc., March 1989.]*



A, habit; B, sepal; C, calyx; D, petal, stamen, and pistil.

Tillandsia narthecioides by R.J. Downs

Questions & Answers

Conducted by Kathy Dorr

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. I am confused. A number of years ago I received a plant from Brazil. It had medium green leaves (approximately one and three-quarters inches wide), with very prominent black spines. The plant was tubular and stood roughly fifteen inches tall. When I first saw the plant, I thought it was perhaps an *Aechmea nudicaulis* for it had the same type of 'pinch' in the lower part of the leaves. However, when the plant came into inflorescence, it produced a pyramidal shape with lovely pink bracts and greenish blue to blue flowers. I sent the plant to Lyman Smith for identification and he said it was *Aechmea caesia.* A couple of years ago I was given a plant that had been identified also as *Aechmea caesia.* This plant has lighter green, banded leaves (approximately two inches or more wide). The spines are small, reddish brown and hardly noticeable. The plant stands taller by at least two to three inches. When it flowered, the inflorescence was pyramidal in shape, BUT the bracts were orange and the flowers were yellow. How is it possible these plants are the SAME plant?

A. I contacted Harry Luther of the Identification Center and the following is his answer: "Yours is one of those questions without a simple answer. The plain green plant with pink bracts and blue flowers is typical *Aechmea caesia* E. Morren ex Baker described from cultivation in 1889 and since collected twice in nature. The banded plant with pink-orange bracts and yellow flowers was described as *Aechmea flavorosea* by E. Pereira in 1979. He distinguished it from *Aechmea caesia* by rounded and emarginate leaves, yellow petals and a white lanuginose [woolly] lepidote inflorescence. None of these characteristics seem to me to deserve specific recognition and I would be happy to consider this a good variety of subspecies of *Aechmea caesia.* Lyman B. Smith doesn't even consider *Aechmea flavorosea* to warrant even this degree of recognition and treats it simply as *Aechmea caesia.* For now, until the yellow-flowered plant is changed to a variety of *Aechmea caesia,* you may call it one of two names and no other : *Aechmea caesia* or *Aechmea flavorosea.* I hope this clears up this matter."

Q. I have several plants with the name *Neoregelia melanodonta* or *Neoregelia concentrica melanodonta.* They are all different. Is this name valid and if so, what should the plant look like?

A. This plant is listed by L.B. Smith in his Bromeliaceae (Flora Neotropica, no. 14, pt.3) as *Neoreglia melanodonta.* For a plain language description Mulford Foster states in *The Bromeliad Society Bulletin* (5:45; 1955): "An unusually compact wide-leaf neoregelia, discovered by M. B. Foster in Brazil in 1940. The black leaf spines give it the name *melandonta.* Blue flowers, yellow-green leaves with purple leaf bases, blotches of magenta splashed over the leaves, and a very decided upturned leaf tip spine surrounded with a dark painted magenta area, make this plant a very outstanding addition to the neoregelia tribe." I couldn't agree more with Mr. Foster. This is truly a much desired plant for any collection.

Q. I was told there is now a second species in the genus *Acanthostachys*. Can you verify this and what does it look like?

A. Yes, there is another species, *Acanthostachys pitcairnioides.* The leaves are not as long as *Acanthostachys strobilacea,* and are plain green with rather noticeable black spines. It produces only a few blue flowers down in the center of the plant.

Q. How long does it take for bromeliad seed to germinate?

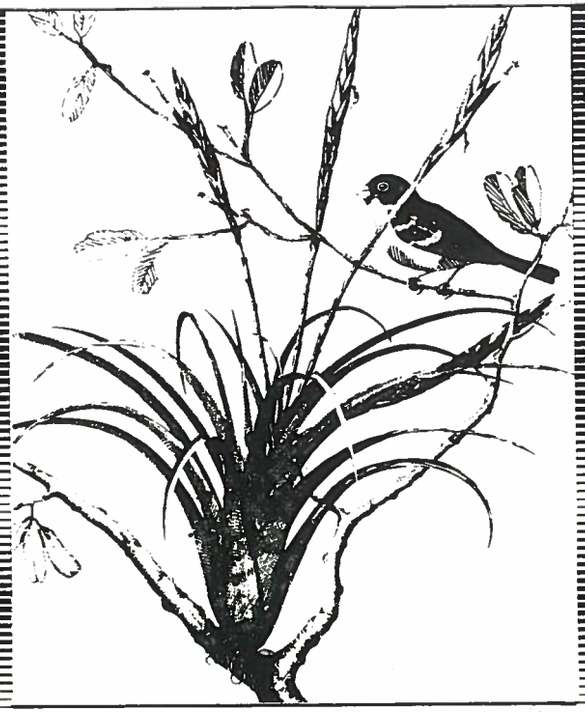
A. I have had some *Billbergia* seed that I could tell were germinating within forty-eight hours, and *Greigia* seed that took up to six months. It can take anywhere between, according to the genus and species. I have learned not to throw out a pot for at least a minimum of six months to be sure.

Q. Are there any billbergias with fragrance?

A. Yes, *Billbergia horrida* is fragrant. It reminds one of Ivory soap. It is most noticeable in the evening or at night.

Q. I have heard pro and con as to whether one should remove unsightly leaves. Is it harmful to the plants?

A. If it is harmful, I am in an awful lot of trouble. I always remove unsightly leaves as soon as possible. I also use scissors and remove the brown areas caused by dryness of mechanical damage from the tips and edges of the leaves. When removing unsightly leaves, be sure you split them and tear from the center out. It is very easy to break off an unseen offset if you just tear them off.



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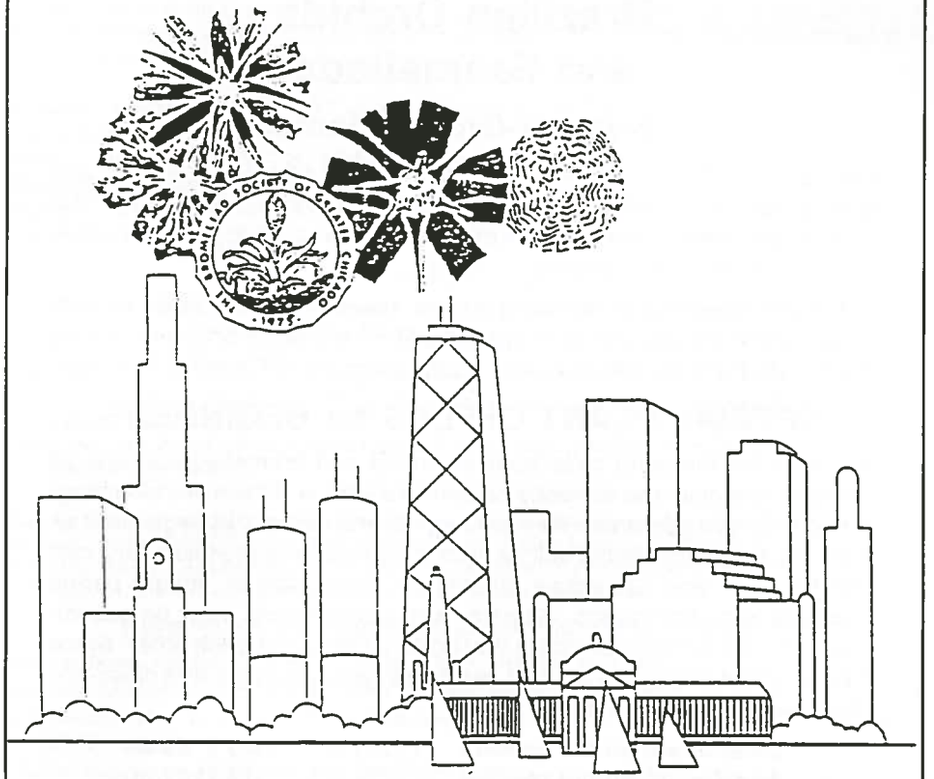

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The Bromeliad Society, Inc.

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

Calendar of Shows *(continued from back cover)*

2-3 June	Baton Rouge Bromeliad Society 14th Annual Show and Sale. Baton Rouge Garden Center, 7950 Independence Blvd., Baton Rouge, LA. Saturday, 1:00 -6:00 p.m.; Sunday, 9:00 - 5:00 p.m. Michael Young (504) 355-5408.
15-16 July	San Diego Bromeliad Society 19th Annual Show and Sale, "Carnival of Bromeliads," Balboa Park, CA. Satruday, 1:00 - 5 p.m.; Sunday, 10 a.m. - 5 p.m. Helga Remy (619) 660-0664, Thelma O'Reilly (619) 670-0830, Darryl Groover (619) 444-3802.
25-27 August	Second International Cryptanthus Show sponsored by the Bromeliad Society of Greater Chicago. Please see ad in this issue for details.

Lotte Hromadnik and Peter Schneider

Tillandsia porongoensis. See story on page 103.

Calendar of Shows

29-30 April	La Ballona Valley Bromeliad Society's annual show and sale. Veterans Memorial Auditorium, 4117 Overland Ave. at Culver Blvd., Culver City, CA. Saturday, noon to 4:30 p.m.; Sunday, 10:00 a.m. to 4:00 p.m.; Potting demonstration both days at 2:00 p.m. Admission is free. Charlyne J. Stewart (213) 391-4118.
5-7 May	Bromeliad Society of Houston, Inc. 21st Annual Show and Sale. Houston Garden Center, Hermann Park, 15 Hermann Ave., Houston, Texas. Show hours: Saturday, 2 p.m. to 6 p.m.; Sunday, 11 a.m. to 4 p.m. Sale hours: Friday noon to 7 p.m.; Saturday, 10 a.m. to 6 p.m.; Sunday, 11 a.m. to 4 p.m. Jim Mayfield (713) 524-2797.
6-9 May	Bromeliad Society of Broward County 4th Annual Standard Show, "A Rainbow of Color" and Sale. Deicke Auditorium, Plantation, FL. Entries received Friday, 5 May, 8 a.m. to noon. Polly Pascal (305) 962-0018, John Laroche (305) 962-6838.
12-13 May	Hawaii Bromeliad Society 4th Annual Show and Sale. Ward Warehouse Shopping Center, 1050 Ala Moana Blvd., Honolulu. Friday 10 a.m. to 9 p.m.; Saturday 10 a.m. to 5 p.m. Lisa Vinzant, secty. HBS, 3680 Manoa Rd., Honolulu 96822.
28 May	South Bay Bromeliad Associates and South Coast Botanic Garden special program: Don Beadle will present his bromeliad slide show and commentary. South Coast Botanic Garden, 26300 South Crenshaw Blvd., Palos Verdes Peninsula. 2 p.m. Sunday. Admission $3.00; $1.50 seniors; 75 cents juniors. Bromeliad display and sale. Stan Oleson (213) 833-2657.

(continued on inside back cover)