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Cover photographs. Front: Closeup of a new species of *Orthophytum* from Brazil, *O. beleniceae*, described in this issue by Elton Leme; this photograph is of a plant in cultivation. Back: ×*Androlaechmea* 'O'Rourke' was named in honor of Fay O'Rourke.

FEATURE ARTICLES

BROMELIAD SOCIETY BUSINESS AND NEWS

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Ortgiesia - The Adaptable *Aechmea*

Andrew Steens[1] **Photographs by the Author**

One of the more confusing groups of Bromeliads is the genus *Aechmea*. Some *Aechmea* seem so tropical as to disintegrate at the first hint of cold air. Others are amongst the most hardy of Bromeliads and are capable of coping with several degrees of frost. Some can take howling salt laden sea gales, while others need cosseting inside. What is an easy way of telling which *Aechmea* will be hardy? After several decades of observation, I have found a simple answer. Many of the hardiest and most adaptable *Aechmea* belong to the subgenus *Ortgiesia*. The name *Ortgiesia* was first used in 1867 to describe a Bromeliad called *Ortgiesia tillandsioides*, which was named after the head gardener of the Zurich Botanical Gardens. This plant is now known as *Aechmea recurvata*.

The *Ortgiesia* subgenus originates in the Santa Catarina State of Brazil, which has a warm temperate to subtropical climate. Some of the group is found throughout Southern Brazil and down to Northern Argentina. Some of them, such as *Aechmea calyculata* are endemic to altitudes of 1,000m or more, while others such as *Aechmea recurvata* and *Aechmea kertesziae* can be found on the beaches.

How do you tell what *Aechmea* belong to this subgenus? The most reliable characteristic is the presence of the three (occasionally four) little spikes that surround the flower petals before they emerge. These are sepals, which in this group of plants are fused together at the base to form a spiky tube out of which the petals emerge. They are often brightly colored, and the contrast between the sepal color and petal color is what makes many of these flowers so beautiful. Within this subgenus, are approximately 20 to 25 species including: *alegrensis, apocalyptica, blumenavii, calyculata, candida, caudata, comata, coelestis, cylindrata, gamosepala, gracilis, guaratubensis, kertesziae, kleinii, leppardii, organensis, pimenti-velosoi, pseudonudicaulis, recurvata, seideliana and winkleri*. As well as these species, there are many hundreds of cultivars and hybrids. Indeed these plants hybridize so easily that there is much confusion over names and even whether some of the species are true species or natural hybrids and whether some of the hybrids may in fact be species themselves. This state of confusion over their names shouldn't discourage Bromeliad fanciers from enjoying these plants in their garden, with or without the correct name.

Mostly, members of subgenus *Ortgiesia* have fairly ordinary foliage, when compared to the intricacies of beauties such as *Aechmea orlandiana* and *Aechmea fasciata*. However, they do have a tendency to produce variegated plants, of which there are quite a number of quite stunning cultivars. Unfortunately, these can be unstable, reverting back to the plain green leaves

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Figure 1.
Aechmea apocalyptica.

Figure 2.
Aechmea calyculata.

Figure 3.
Aechmea coelestis.

Figure 4.
Aechmea covata.

Figure 5.
Aechmea gamosepala.

Figure 6.
Aechmea pimenti-velosoi.

unless the grower takes care to rogue these reversions out. One of the most well known of the variegated *Ortgiesia* is the cultivar *Aechmea gamosepala* 'Lucky Stripe' which has striking stripes of cream running up the leaves. The variegation varies from plant to plant, which makes it more interesting. Some plants have only a single stripe down each side, while other plants are so heavily striped as to appear almost white.

Without exception, the members of this group are easy to grow, pup freely, are very free flowering and capable of adapting to a wide range of conditions. This, combined with their vibrant flower colors has made them very popular and widespread around the world. Nearly every collector has some of these plants in their collection. However, because they are relatively common, they are also often overlooked and their true potential in the garden is often not realized.

One of their best characteristics is their ability to acclimatize to almost any level of sunlight. In the shade, a hybrid such as *Aechmea* 'Covata'(*A. recurvata* × *A. comata*) produces long deep green leaves, while in the sun it produces stocky olive green leaves mottled with autumnal colors. While this group is so adaptable, some such as *Aechmea recurvata* and its varieties are best in full sun, where their colors at flowering are most intense. Others such as *Aechmea gamosepala* look best in full shade where dark, glossy, arching green leaves develop.

All the members of this group make fantastic ground cover plants. Typically, these plants hold their pups close to the mother plant, so once established the clump forms an effective ground cover. One plant will produce 2 to 5 pups per year, with the clump typically doubling in area each year. In fact, one of the biggest problems with growing these is to keep the clump from taking over too much garden.

An easy and effective way of overcoming this delightful problem is to grow these plants in a confined space. They will happily adapt to growing in pots, or on tree fern stumps, in trees as epiphytic clumps or between rocks. The only limit to the range of places they can grow is the gardeners' imagination.

Another great characteristic of these plants is their incredible salt tolerance. Many are indigenous to the beaches of Brazil, where regular Atlantic storms cover them with salt spray. As a consequence, they have no trouble growing in coastal gardens, even down to the sand dunes. Some of the most spectacular clumps of *Aechmea caudata* I have seen are grown in near pure sand a stone throw from the beach. The metre tall leaves turn a golden green in full sun and the tropical effect is enhanced by the vibrant reddish bracts and lime yellow florets.

Although many of this group have fairly short-lived flowers, often after flowering, the flower spike colors up further, producing vibrant color, which lasts for months. This is a bonus, as most of this group flower in late autumn and winter, giving bright sunny color for that dreary part of the year. A few,

such as *Aechmea coelestis* and *Aechmea apocalyptica* form long lasting berries, which are so dark as to be almost black.

Cold resistance is an important feature of these plants and one that transfers readily to any hybrids made with them. Some, such as *Aechmea recurvata* and *Aechmea pimenti-velosoi*, can take several degrees of direct frost, down to -5C. Others such as *Aechmea gamosepala* will take these temperatures, but only if planted under trees, in the open, they will still handle light frosts with ease.

With all these attributes, the *Ortgiesia* subgenus of *Aechmea* is well worth a place in any Bromeliad fanciers' garden and is a great, foolproof introduction to Bromeliads for the rest of the gardening community.

A New Species of *Tillandsia*, and the History of KK 180

Renate Ehlers[2] and Len Colgan[3]

There is a collection of tillandsias that has created much discussion between the authors and others for a number of years. The history dates back to the years when Mr. Karel Knize was exporting plants from his nursery just outside Lima, Peru. This predominantly involved cactus and succulent seed and plants collected by Knize during his frequent expeditions throughout Peru and Bolivia. In fact, among the many new species and varieties of cactus he discovered, some were named in his honor (e.g., *Cintia knizei, Weingartia knizei*)

Of significance to us, he also collected many bromeliads, most of which were tillandsias. His 1994 price-list showed 218 different numbered tillandsias which have become known as KK#1 to KK#218 to collectors. Large shipments were exported to nurseries in the USA, Germany, and elsewhere, from where individual plants have found their way all over the world. Unfortunately, many of the given names corresponding to certain KK numbers are incorrect, or else only a location or feature was mentioned. In addition, there is no guarantee that two plants from different sources with the same KK number are the same or even related. Another complication is that Knize changed his numbering system over the years. In 1978, his cactus collections had KK numbers but tillandsias did not. In 1981, he changed his numbering system so that everything above number 3000 was a tillandsia. In 1988 he changed it again so that numbers over 2500 were tillandsias, and hence the current KK 87 (see below) should be equivalent to 2587. Derek Butcher bought 2587 as "*mcbridae*" in 1988 but it turned out to be a caulescent form of *Tillandsia nana*. In 1991, the KK numbers specifically for tillandsias started. In that year, seed from KK121 and KK122 was purchased by Butcher, and germinated. These have not yet flowered (2004) but both seem to be *Tillandsia latifolia*. Despite all of these drawbacks, there is no

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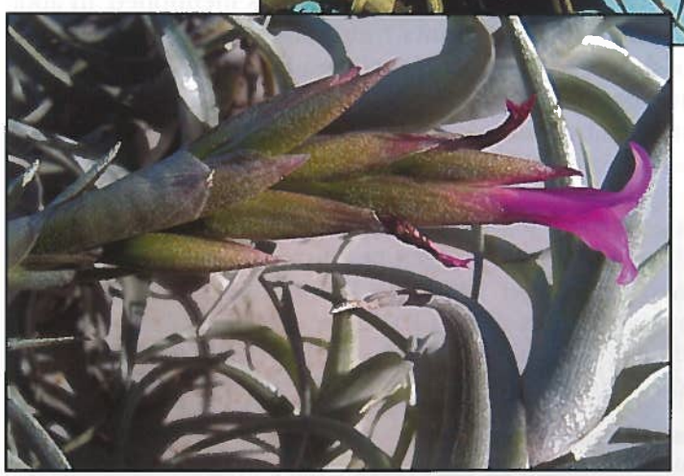
Figure 7. *Tillandsia rubia* flowering in 1994. Note the ruby color of the petals. Photograph by Len Colgan.

Figures 8, 9. Descendents of the same plant in 2003. Photographs by Derek Butcher.



doubt that Knize's contributions to the genus tillandsia have been significant when one considers the number of new species and varieties discovered, and the vast area explored.

Len Colgan had the pleasure to visit the Knize nursery in 1993, and brought back a number of tillandsias to Australia. These included a group of plants of similar appearance. The numbers, with the corresponding annotation on the price list, were:

KK#87:"mcbridae (small 3-6cm, rare)"

KK#121:"spec. S. Marcos (Fl. Red) Neuheit"

KK#122:"spec. S. Marcos-Maranon (lv. 2-3cm)"

KK#180:"spec. (near or *T. edithae*, 2200m)"

KK#185:"nana (Form, root formed, pl short)"

Over the years, various opinions have been put forward as to the true identity of these KK numbers. It is likely that KK numbers 87, 121, 122, 185 come from Peru (121, 122 are almost certainly the same). They have decurved inflorescences with pink flowers. There are similarities but also differences when compared with, for example, *Tillandsia macbrideana*, *T. churinensis*, *T. pseudomicans*, and *T. nana*. Whether there is a continuous swarm of plants across Peru, perhaps including those four species and these four Knize numbers, is a matter of conjecture. In fact, related plants have since been collected elsewhere in Peru that complicate the picture further as they do not precisely match species known to us.

When Colgan visited Renate Ehlers in Stuttgart in July, 2002, a serious attempt was made to unravel this group. We determined that KK#180, which comes from northwest Bolivia, is sufficiently different from all other plants mentioned above to warrant being described as a new species. It flowered in the Ehlers collection (imported to Germany by Dötterer) in 1992, and in the Colgan collection in 1994. It is remarkable for the richness in the color of the flowers in an upright inflorescence. Colgan's notes state that the petals have a color which is "somewhere between ruby red and rich wine red with a hint of violet". However, the color can vary to rose. FIGURE 1 is a slightly depauperate and lax inflorescence from 1994 (Colgan), whereas FIGURES 2 and 3 are from its descendents in 2003. The collection location details in the description come from a personal correspondence between Ehlers and Knize.

The precise status of the other four KK numbers, and their relationship to described species, is open for further investigation.

Tillandsia rubia R. Ehlers & L. Colgan, sp. nov. TYPE. Bolivia. La Paz: Río Sorata Canyon in direction of Ona gold mine, 2800-3000 m, field collected by K. Knize (#180) and flowered in cultivation; 1992, *R. Ehlers s.n* (Holotype: LPB). FIGURES 6-8

A *Tillandsia churinensis* Rauh, characteribus sequentibus differt: habitu minori, foliis angustioribus, spicis angustioribus, subteretibus nec valde complanatis, floribus laxe dispositis rhachim flexuosam per anthesin exhibentibus, bracteis florigeris minoribus quam sepala brevioribus, ecarinatis acutisque, sepalis adaxialibus tertium partem connatis nec liberis, petalis longioribus; a *T. macbrideana* L.B. Sm. foliis multo longioribus usque ad 10 cm metientibus, laminis foliorum quam vaginas multo longioribus, acuminatis, scapo longiori, inflorescentia non semper simplice, spicis solum 6 mm latis, floribus laxe dispositis, rhachidi flexuosa et visibili, bracteis florigeris quam sepala brevioribus, petalis longioribus.

Plant long caulescent, roots present, stem 15-25 cm long, sometimes branched, pendent to ascending, leaves many, to 10 cm long, polystichous, laxly imbricate, slightly secund, rigid, on both sides, densely appressed, cinereous-lepidote. ***Leaf sheaths*** to 3 cm long, 1.6 cm wide, elliptic merging with the blade; ***blades*** 1 cm wide above the sheath, triangular acuminate, recurved near apex, 5cm long. ***Scape*** slightly decurved, 3-5 cm long. ***Scape bracts*** laxly polystichous, subfoliaceous, the apical ones 2 cm long. ***Inflorescence*** terminal, upright to decurved, a simple spike or bipinnately compound with up to 6 spikes. ***Spikes*** 2-5 cm long, 5-8 mm wide, narrowly elliptic to lanceolate, 3-9 subdistichous flowers, complanate to subterete, rachis flexuous, flat, glabrous, green. ***Floral bracts*** straight, laxly imbricate, the rachis mostly visible, twice as long as the internodes, 12-20 mm long, 6-11 mm wide, elliptic acute, slightly shorter than the sepals, adaxial glabrous, abaxial green, rose at top, punctulate lepidote, membranaceous edge. ***Sepals*** 13-17 mm long, 3-4 mm wide, lanceolate, acute, the posterior ones carinate and connate for 1/3-1/4 of length. ***Petals*** 2.2-2.9 cm long, 3-4 mm wide, ligulate, tubular, the tips recurved, from ruby red to rose, becoming white toward the base. ***Stamens*** deeply included, filaments straight, l-1.5 cm long, 0.7-1 mm wide at base, flat, becoming narrower toward apex, 1 or 2 times plicate, anthers 3.5-4 mm long 0.3 mm wide, linear, basifixed, yellow, pollen egg-yellow, style 9 mm long, thin, white becoming rose near apex, stigma very small, only as wide as the style, white. ***Ovary*** 3.5 mm high, 2 mm wide, triangular in cross-session, light green.

Distribution: Bolivia, north of La Paz, Río Sorata, east of Lago Titicaca,

Tillandsia rubia seems to be related to *Tillandsia churinensis* Rauh and *T. macbrideana* L.B. Sm. *Tillandsia rubia* differs from *T. churinensis* Rauh by the following characters: plant smaller (blades to 5 cm long vs. to 10 cm), leaves narrower (10 mm wide vs. 15 mm), spikes narrower (5-8 mm wide vs. 8-10 mm), not strongly complanate but to subterete, flowers lax, the flexuous rhachis visible at anthesis, floral bracts smaller and shorter than the sepals, ecarinate and acute, the posterior sepals 1/3 connate, petals longer (to 29 mm long vs. to 25 mm).

Tillandsia rubia differs from *T. macbrideana* L. B. Smith by having longer leaves (8-10 cm long vs. 3-4 cm), the blades much longer than the sheath (vs. equaling the sheath) and acuminate (vs. acute), the scape 3-5 cm long (vs. very short or lacking), inflorescence not always simple, narrower spikes (5-8 mm wide vs. 15 mm), lax flowers with visible rachis, the floral bracts shorter than the sepals, and longer petals (to 29 mm long vs. to 25 mm).

Acknowledgments

Our thanks to Walter Till, University of Vienna, for his cooperation and help with the Latin diagnosis.

Growing Small, Grey-Leafed Tillandsias

Bob Reilly[1]

Tillandsia is the largest genus in the bromeliad family, with over 400 species and a wide diversity in size and shape. This article discusses a group of plants which I have chosen to describe as the small, grey-leafed tillandsias. They all have silver-grey, silver-green, or grey-green leaves, and do not exceed 30 cm in diameter. Nor does the term cover those really small tillandsias normally having a height of less than 5 cm or so.

All of the tillandsias discussed in this article have similar growing requirements.

Typically, they all grow best on "mounts" of some type. Pieces of cork slabs have been used extensively by some growers. Other materials I have used include:

- Pieces of hardwood fence palings and flooring (but not material which has been painted or treated with timber preservative). Well weathered wood is best, as it provides plenty of crevices and cracks for the plant's roots.

- 2 to 3 cm wide callistemon and melaleuca branches which have been dried in a shady place for about a year. The drying process can be accelerated by leaving the leaves attached to the branch.

It is important plants are firmly secured to their mounts. If they are not, the plant is very unlikely to thrive. Methods for securing tillandsias to mounts include:

- Tying them on with strips of light-coloured hosiery (avoid bright colours as they will not "blend" into the plant and mount).

- Gluing them on using a product such as Liquid Nails. However, use solvent-based rather than water-based glues, as the latter product can disintegrate before the plant sends roots onto the mount.

Mounts can be held in position by securing a thin wire "hook" to their tops, and then attaching them to a variety of fixtures. Examples include: sheets of galvanised weldmesh suspended vertically, shadecloth walls of bushouses, trees, and fences.

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The plants described in this article can be grown in full sun for most of the day in southern Queensland during winter and under 50% shadecloth for the balance of the year. (However, they will also grow quite well under 75% shadecloth for the entire year, which is how I grow them.). Positions in the garden which have similar amounts of shade will also produce good results. However, it is important good air circulation exists in whatever location is chosen for these plants.

Watering once a week in winter, between 7 am and 10 am, and twice a week in summer between 7 am and 10 am or 4 pm and 6 pm, will usually produce good results. Watering at these times enables the plant to dry out before mid to late evening, and thus reduce the chance of rot developing. Where plants are grown in clumps, it is important the entire surface of the clump (including its top and bottom) are watered. This approach ensures all plants receive water, as they do not share a common root system (which would enable water to be transported from one plant to another).

While tillandsias are often described as "air plants," they need nutrients to grow and flower. In nature, these are obtained from particles of animal and vegetable matter which are either carried by the wind onto a plant, or which fall onto it. However, the amount of food available from such sources is greatly reduced if a plant is grown in a shadehouse or on a house veranda.

Nutrients can be supplied through the weekly or fortnightly application of liquid fertilisers. I use, on a weekly basis, a fertiliser which has a Nitrogen (N): Phosphorous (P): Potassium (K) ratio of 14:4.4:2.5. I wet the plant's leaves before applying liquid fertilisers, as this assists in nutrient absorption.

These plants have few pests and diseases. Mealy bugs and "soft" scale can gather at the base of leaves and old flower scapes. They can be treated by dipping the plant in a commercial insecticide at the concentration recommended by the manufacturer. However, do not use white oil or other oil-based products, as these can kill tillandsias.

Grasshoppers will sometimes attack the foliage of these plants. They can be easily killed by the direct application of physical force in the early morning when they are relatively inactive. The periodic removal of dead leaves helps to minimise the chances of rot developing.

These tillandsias produce offsets (pups) in various ways:

• Some tillandsias, for example, certain varieties of *T. intermedia*, produce pups along, or at the end of, flower spikes (as well as other locations on the plant). Such pups can be detached from the flower spike by using secateurs.

• Other tillandsias, for example, *geminiflora* and *gardneri*, usually only produce one pup. As this is located near the plant's base, and very near to its "growing point", the best approach is to leave the pup on the mother plant. Over time, the mother plant will "shrink" in size, and eventually "disappear" into the growing pup.

• Many tillandsias, for example *bulbosa*, *butzii*, and *caput-medusae*, readily form clumps. While these can be separated by "teasing" the plants apart, such species often look their best when grown as clumps.

• Some tillandsias produce pups near the plant's base. Unlike the first category of tillandsias described above, these pups can be removed by gently easing them away from the plant, when they are about half the parent's size. Examples are *ionantha*, *albertiana*, *crocata*, and *streptocarpa*.

• A number of tillandsias grow on long stems (this is known as a "caulescent" growth habit). Pups occur along these stems and can be removed with secateurs. Examples are *bergeri*, *aeranthos*, and *tenuifolia*.

• Some tillandsias, for example *disticha*, produce pups at the end of stolons. They can be removed by cutting the stolon, with secateurs, about 2 cm from the pup's base.

In preparing the plants' descriptions, I have drawn heavily on the following books: Isley (1978), Oliva-Esteve (2000), Rauh (1979), Shimizu & Takizawa (1998). The titles of these books are given at the end of this article.

• *aeranthos* While this is a variable species in terms of its size and inflorescence, a typical plant averages 12 cm in diameter and height. Over time, it grows outwards along a stem. The leaves are silver-grey, and spread in all directions from the stem. It is easy to confuse this plant with *T. bergeri* when they are not flowering. The small inflorescence sits on top of a stalk (floral scape) which raises it just above the plant's leaves. Red floral bracts surround each of the 10 or so flowers which are deep blue in colour. This plant is easy to grow and readily forms a clump.

• *albertiana*. Each plant resembles a small tuft of grey-green leaves on a stem. Plants are usually 5 to 10 cm tall and wide. Each plant has one cherry-red bloom which is about 1 cm wide. Unlike many tillandsias, the bloom lasts for over a week. The plant rapidly forms a clump.

• *bergeri*. This species eventually produces stems, over 30 cm long, with the current "plant" being at the stem's end. Each plant is about 12 cm wide and high. Leaves are silvery-grey in colour. The inflorescence emerges about the leaves and consists of a small cluster of about 10 flowers with white and violet petals. The floral bracts are often a pale pink. This plant appears to need good light to flower well. I have a clump grown under 75% shadecloth which produces few flowers compared with one which receives the full morning sun throughout the year, and filtered light in the afternoon. The plant rapidly forms a clump over 60 cm in diameter. Ultimately, the weight of the plants causes the clump to fall apart.

• *brachycaulos* About 30 grey-green leaves form a 15 cm wide and 10 cm high rosette. At flowering, the entire plant turns a bright red. The flowers, which have violet-coloured petals, form a cluster in the plant's centre.

• *bulbosa*. The plant is very variable in size, but typically reaches 15 cm in height and 12 cm in diameter at maturity. (However, there is a miniature form which only reaches 7 cm in height.) About 6 leaves form a "bulb" at their base and then arch outwards. The leaves' colour is quite variable with some plants (clones) have grey-green leaves while others are a silvery-grey. When the plant flowers, the upper leaves and inflorescence are cherry-red in colour. The inflorescence consists of a multi-branched spike, with each "branch" being about 5 cm long. The flowers have blue petals. This plant readily forms a clump.

• *butzii*. The few leaves are typically up to 30 cm long, form a "bulb" about 5 cm long at their base. The inflorescence consists of a single pink spike about 15 cm long and 1 cm wide, while the flowers have violet petals. This species readily forms a clump. It is very variable in size. Some clones have multi-branched spikes.

• *caput medusae*. At maturity, this plant is 15 to 40 cm high and 15 to 30 cm wide. Most forms have up to 10 light green leaves, typically rising from a bulbous base about 5 cm wide and high, although some are much larger. At flowering, a cluster of 6 to 8 small pink to red spikes up to 15 cm long and 2 cm wide emerge from the plant's top. The flowers have blue petals. This is a very variable species. However, the smaller forms, in particular, readily form clumps which are quite decorative even when they are not in flower.

• *cacticola*. A mature plant is often about 10 cm high and 20 cm wide. About 15 silver-grey leaves form a "flattened" rosette. The inflorescence rises from a 25 cm long "stalk" and consists of 5 to 8 lavender-pink spikes each of which is about 10 cm long and 3 cm wide. The flower petals are white, with violet tips. The long-lasting colouration of the spikes makes the plant well worth growing.

• *crocata*. This species rapidly forms small clumps. Mature plants are 7 to 15 cm in height, width, and appear like small tufts of silvery-grey leaves. A few, aromatic, flowers appear at the end of a 10 cm long stalk. The flower's colour is typically a pale to deep yellow.

• *gardneri*. Around 20 silvery-grey leaves form a rosette about 20 cm high and 15 cm wide. The multi-branched spike is located at the end of a 15 cm long stalk. Each of the pink, elliptically shaped "branches" is about 6 cm long and 3 cm wide. The flowers have pink-red petals. This species, while attractive at all times, is quite spectacular when it flowers.

• *intermedia*. This few-leaved plant has an elongated, bulbous base about 20 cm long and 3 cm wide. The overall height is about 30 cm, while the leaves are grey-green in colour. A multi-branched spike rises just above the leaves. Each branch is pale pink and is around 10 cm long and 4 cm wide. The flowers have violet-purple petals. Several generations of plants may be alive at any time. In some clones, these may form a "chain" of plants, several metres long. This plant may be in some collections under its old name: *circinnata*.

• *ionantha*. Up to 40 leaves typically form a dense rosette from 4 to 10 cm high and 2 to 5 cm wide. The leaves are normally silvery-green in colour (although the variety *stricta* has reddish leaves) until it flowers. At that point, the top half of the plant usually flushes red, although many clones turn red all over. 2 to 4 flowers with violet petals emerges from the top of each rosette. However, there is a form (called Druid) with white petals, with leaves which turn yellow, rather then red, at flowering. This species is quite variable in size and growth habit. However, its long-lasting red colouration in the middle of winter (which is when many clones flower, although some flower in spring and early summer), and "no fuss" growing requirements, makes it a very popular plant.

• *ixioides*. About 10 silvery-grey leaves form a semi-erect rosette around 15 cm wide and 10 cm high. Four to 10 yellow-petalled flowers are clustered at the end of a 7 cm long stalk (floral scape).

• *streptocarpa*. The 10 or so silver-grey leaves form a plant about 25 cm in height and width. Mature leaves have curled tips. The inflorescence forms at the end of a 20 cm plus stalk and consists of 5 to 8 linear clusters of around 6 flowers each. The fragrant flowers normally have blue petals, although there is a form with white ones. This species is quite variable in size and appearance, but is well worth growing for its foliage and fragrance at flowering time.

• *stricta*. Numerous, typically grey-green (but often silver-grey), leaves form a rosette 10 to 20 cm wide and 8 to 12 cm high. The arching inflorescence forms at the end of a 5 - 10 cm long stalk and consists of up to 10 flowers surrounded by pink to red bracts. The flowers typically have blue or purple coloured petals. This is a very variable species with respect to size, leaf colour and bract/petal colour. Some clones will readily form large clumps of 50 or more plants. When they are all in bloom, the clump makes a spectacular sight. There are summer and winter-flowering forms of this species.

• *tenuifolia*. This species typically has a stem about 20 cm long, while its width is 3 to 5 cm. The leaves are like short pine needles and are usually green, although a dark red to black form is also available. A small cluster of up to 10 white-petalled flowers, surrounded by pink to red bracts, forms the plant's inflorescence. It sits at the top of an erect floral scape which rises above the plant's leaves (There is also a form which has flowers with blue petals). This variable species is easy to grow. It is quite interesting because of its long stem, relative to its width.

All of the plants described above are easy to grow, and can be obtained easily from a number of sources. They could easily form the basis of a small tillandsia collection.

Acknowledgements

I thank Nev Ryan for his help in preparing this article.

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Plant Breeder's Rights and Patents

Geoff Lawn, BSI Director, Australia

Note: This article is an overview only and concerned parties are strongly advised to check the specific current national laws, procedures and requirements from the relevant authorities in their own country.

The Case in Australia

In Australia, Plant Breeder's Rights (PBRs) are exclusive commercial rights to a registered new variety (cultivar). The rights are intellectual property, akin to patents, trade marks and copyright, administered by the Plant Breeder's Rights Office (PBRO) in Canberra. The program was first established under the Plant Variety Rights Act 1987 (PVRA) which was succeeded by the current Plant Breeder's Rights Act 1994 (PBRA) plus Bill Amendments 2002. This scheme encourages plant breeding and innovation through the legislated grant of limited commercial use by breeders of new varieties. PBRs legally protect innovators in their research investment, selective breeding, raising and marketing new varieties, without which anyone could commercialise each new variety with no recourse to the innovator. The PBRA is founded on and is revised from the 1978 and 1991 versions of the International Convention for the Protection of New Varieties of Plants. This Convention was established by the International Union for the Protection of New Varieties of Plants (UPOV), based in Geneva, Switzerland from which 53 countries to date (Nov.2003) model their plant patent standards, classifications, legislated procedures and regulations. UPOV is an inter-governmental organization which also conducts or contributes to regular symposia on a range of related issues such as the genetic use restriction technologies (GURTs), Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in the World Trade Organization (WTO).

PBRs must be applied for each new variety and in every country where PBR protection is required, a lengthy but cost-effective process. Not only cultivation-bred but also previously-undiscovered, wild-collected unique clones may be eligible for PBR grants. It is possible also to have a new variety both

PBR and patent- protected as PBR protects the end product (the plant variety as a whole) whereas patents tend to protect the process or components of varieties, such as gene technology or gene sequences.

The PBRA defines "breeding" as including "discovery" and "selective propagation". In Australia the original Breeder or Discoverer (or if overseas, his authorised Australian Agent) initially applies to the PBRO, the official form (Part 1) requiring: applicant's personal details; breeder's details; a brief description, proposed name (to meet ICNCP Rules) and photograph of the new variety to establish a prima facie case that the variety is distinct from other varieties of common knowledge; where the variety was bred and it's parentage (if requested, full details are not publicly disclosed) ; a brief description of how the variety was bred; details of any application or granted rights for the variety in any other country; the name of an accredited qualified person (QP) who can verify the application particulars (as a non-consultant QP) and will supervise any test growing of the variety if required (as a consultant QP). Accreditation as a QP is by application to the PBRO and based on qualifications and experience. Both a non-consultant and a consultant QP's accreditation must be annually renewed with the PBRO. Non-consultant QPs act for their own or their employers' varieties, whilst consultant QPs operate on a fee for service basis. The consultant QP must have specialist technical knowledge and expertise of the genera or the varieties he is handling, their precise official descriptions (QPs application form Part 2 verifies Part 1), data collection, photographs and management regime. The consultant QP's role complements the PBRO Examiner's role in ensuring the particular PBR grant is legally sustainable in the event of any later infringement and subsequent litigation.

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

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

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

Some Breeders wrongly interpret the legislated rules on time limit to mean only sales to the "public" or in "commercial quantities" constitute a sale, but this misconception could result in their PBR application being rejected as ineligible. PBRA exemption clauses allow the breeder (or another person with the breeder's consent) to sell his new variety (or plant material thereof) if the sole purpose is to multiply it on behalf of the breeder and /or by the sales agreement, immediately after the plant material is multiplied, the same vests in the breeder. Test marketing the new variety up to 12 months only prior to the PBR application lodgement date is permitted but risky, as there is no PBR protection. After the PBR application lodgement, the PBRO

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

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

CONT'D ON P. 82

Studies on *Orthophytum* - Part II: Two New Scapeless Species

Elton M. C. Leme[5]

Two new species of *Orthophytum* are described and the subcomplexes *amoenum* and *vagans* are discussed.

New Species in "Subcomplex *amoenum*"

In the complex of *Orthophytum* species with sessile inflorescences, the "*subcomplex amoenum*" groups together the most ornamental species in the genus due to the color of the inner leaves and primary bracts. These inner leaves and primary bracts often become bright red or orange at anthesis, forming colorful "inner rings" of varying width around the inflorescence, which contrast with the usually green outer leaves (Leme 2004). In order to distinguish the unusual aspect of the stemless species of this subcomplex, Ule (1908) created the genus *Sincoraea*, with a single species, the delicate *S. amoena* Ule, from Serra do Sincorá, located at Chapada Diamantina, Northeastern Brazil. The genus *Sincoraea* was accepted by Mez (1935), but Smith (1955) reduced it to a synonym of *Orthophytum* and transferred its single species to it, proposing *Orthophytum amoenum* (Ule) L.B. Sm. as a new combination.

One of the main subjects for further studies on *Orthophytum* involves checking the hypothesis of the validation of *Sincoraea* (i.e., "*subcomplex amoenum*" species) under genus or even subgenus status. Currently, this subcomplex contains seven recognized taxa, mostly endemic to different areas of Chapada Diamantina, Bahia State, extending into neighboring areas of Minas Gerais State, and are as follows: (1) *O. albopictum* Philcox, (2) *O. amoenum* (Ule) L.B. Sm., (3) *O. burle-marxii* L.B. Sm. & R. W. Read, (4) *O. burle-marxii* var. *seabrae* Rauh, (5) *O. hatschbachii* Leme, (6) *O. humile* L.B. Sm., (7) *O. navioides* (L.B. Sm) L.B. Sm. The new species described below is an addition to "*subcomplex amoenum*."

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Orthophytum heleniceae Leme, sp. nov. **Type**: Brazil. Bahia: field collected in Andaraí, Cachoeira da Garapa, 1300 m, by *Helenice Ribeiro & Oscar Ribeiro s. n.*, flowered in cultivation July 2003, *E. Leme 5794* (Holotype: HB). FIGURES: front cover, 10-12

Ab *O. hatschbachii* Leme, cui affinis, foliis perdense spinulosis, spinis usque ad 0.5 mm longis, inflorescentia manifeste composita, bracteis floriferis dense spinulosis, manifeste glandulosis, sepalis longioribus sed angustioribus, manifeste glandulosis, petalis supra basin appendicis apice dense crenulatis ornatis et tubo epigyno ca. 1.5 mm longo differt. A *O. navioides* (L. B. Sm.) L. B. Sm., cui proxima, planta haud manifeste stolonifera, laminis foliorum latioribus, perdense spinulosis, bracteis floriferis centralibus altitudinem sepalorum superantibus, sepalis distincte brevioribus et antheris apice obtusis differt.

Plant saxicolous, stemless, propagating by short basal shoots. ***Leaves*** ca. 55 in number, spreading-arcuate, coriaceous and slightly succulent toward base, forming a very dense round rosette; ***sheaths*** inconspicuous but broader than the blades, very densely spinulose, inconspicuously and subdensely punctulate-lepidote adaxially, whitish toward base; ***blades*** narrowly sublinear-triangular, long acuminate-caudate, 25-30 cm long, 1.3-1.5 cm wide at base, slightly canaliculate, ca. 2 mm thick near the base, green,

Figures 10, 11. *Orthophytum heleniceae* in the original type locality. Photographs by O. Ribeiro.

lustrous, abaxially glabrous and nerved, adaxially sparsely and inconspicuously punctulate white-lepidote, margins very densely spinulose, spines subtriangular-uncinate, antrorse, whitish, to 0.5 mm long, 1-1.5 mm apart, at anthesis the inner blades becoming red toward the apex and abruptly greenish-yellow near the base; scape absent. ***Inflorescence*** bipinnate in its outer portion, simple in its inner portion, subumbellate, sessile, densely many-flowered, 5-6 cm in diameter; ***primary bracts*** with margins very densely spinulose, spines less than 0.5 mm, whitish, the basal ones prevailing retrorse, the upper ones antrorse, the outer primary bracts foliaceous and resembling the inner leaves, but shorter and narrower toward apex, red toward apex and abruptly greenish-yellow near the base, forming at anthesis an inner 9-10 cm in diameter, greenish-yellow colored ring, as well as an outer red colored ring around the inflorescence, the inner primary bracts narrowly triangular, ca. 5 cm long, ca. 2 mm wide at base, distinctly exceeding the fascicles, suberect, greenish-yellow, inconspicuously and sparsely glandulose including the margins; ***fascicles*** ca. 14 in number, flabellate, complanate, shortly pedunculate, ca. 22 x 15 mm (excluding the petals), 2 or 3-flowered; ***floral bracts*** triangular, light green, densely glandulose mainly toward apex including the margins, those of the fascicles with narrowly acuminate-spinose apex, distinctly carinate, ca. 18 x 13 mm, slightly shorter than the sepals, margins densely spinulose, those of the inner simple part of the inflorescence with an acuminate and usually hooklike incurved apex, ecarinate, 22-35 x 10 mm, coriaceous toward apex, densely spinulose near the base and sparsely spinulose toward apex, erect (inner) to suberect (outer), from slightly exceeding the sepals (inner) to distinctly exceeding the flowers (outer). ***Flowers*** 24-26 mm long (including the petals), sessile, very densely arranged, slightly fragrant at anthesis; ***sepals*** subsymmetrical, narrowly subovate-triangular, acuminate, 13-15 x 4 mm, free, entire, the posterior ones alate-carinate, the anterior ones carinate or nearly so; ***petals*** narrowly subspatulate, apex subacute to rounded-obtuse, 17-18 x 4 mm, free, at anthesis erect and greenish except for the subspreading to suberect white distal portion, bearing 2 narrowly cupulate, densely crenulate appendages ca. 6 mm above the base, as well as 2 conspicuous longitudinal callosities which slightly exceed the filaments; ***filaments*** terete, greenish toward apex, the antepetalous 8-9 mm long, adnate to the petals for ca. 6 mm, the antesepalous ones 11-13 mm long, free; ***anthers*** 2.5-3 mm long, base and apex obtuse, fixed at 1/3 of its length above the base, laterally compressed; ***stigma*** simple-erect, ca. 1 mm long, blades erect, margins nearly entire; ***ovary*** ca. 6 mm long, ca. 5 mm in diameter at apex, trigonous, whitish, glabrous; epigynous tube crateriform, ca. 1.5 mm long; placentation apical; ovules obtuse. ***Fruits*** much enlarged from the ovary, greenish.

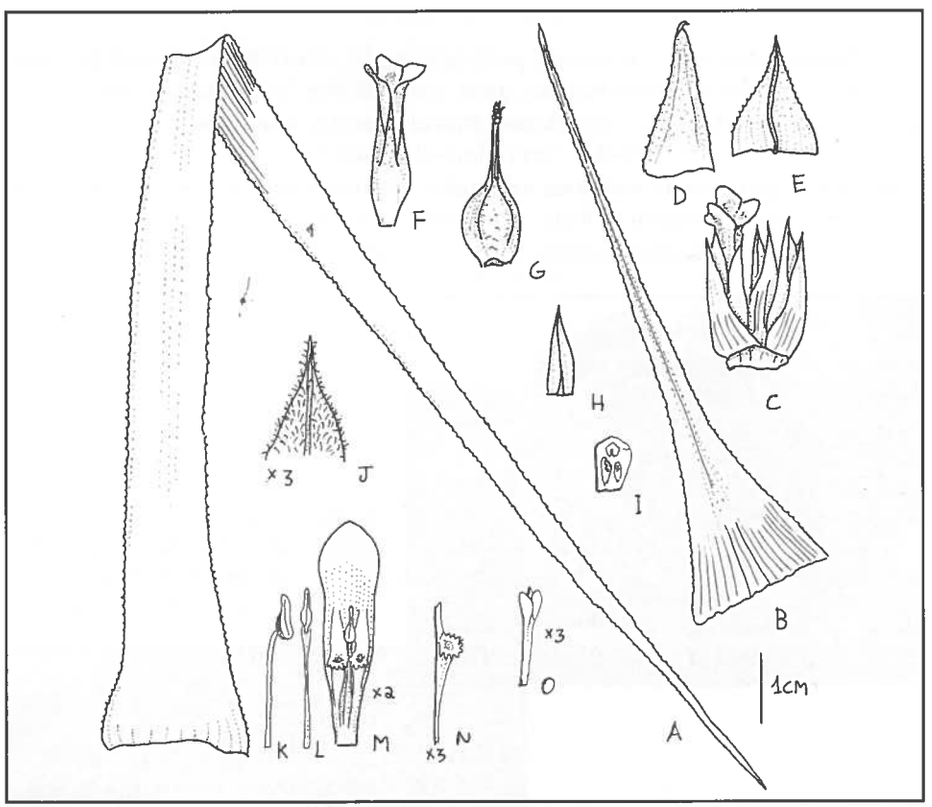

Figure 12. *Orthophytum heleniceae* (Leme 5794): a) leaf; b) outer primary bract; c) fascicle; d) floral bract of the inner part of the inflorescence; e) floral bracts of the fascicles; f) flower; g) fruit; h) posterior sepal; i) longitudinal cross-section of the ovary; j) glandulose apex of the sepal; k) side view of the antesepalous stamen; l) front view of the antesepalous stamen; m) petal; n) side view of petal appendage; o) stigma. Drawing by E. Leme.

In order to establish the morphological differences from the closest relatives of *Orthophytum heleniceae*, the type specimens of *O. hatschbachii* and *O. navioides* were studied as well as living plants of both species collected for this study at the type localities, as follow:

Orthophytum hatschbachii: Bahia, Rio de Contas, Mato Grosso, 1,300 elevation, 7 April 1992, *G. hatschbach 56827, M. Hatschbach & E. barbosa* (MBM); 17 April 2001, *E. Leme 5328, R. Reis Jr. & E. Silva* (HB); 17 April 2001, *E. Leme 5331, R. Reis Jr. & E. Silva* (HB).

Orthophytum navioides: Bahia, Jacobina, on perpendicular rocks above stream in isolated ravine, 16 Jun. 1939, *M. & R. Foster 90* (US, R, SP); 4 Aug. 2003, *H. Ribeiro & O. Ribeiro* s.n., cult. *E. Leme 5867* (HB).

Orthophytum heleniceae is closely related to *O. hatschbachii*, but differs by the denser spinulose leaves (spines 1-1.5 mm apart vs. 5-10 mm apart), with smaller spines (to 0.5 mm long vs. 0.5-1.5 mm long), inflorescence distinctly bipinnate (vs. pseudo-simple), floral bract densely spinulose (vs. subentire to inconspicuously spinulose) and distinctly glandulose (vs. not glandulose), sepals longer and narrower (13-15 x 4 mm vs. 8 x 5 mm) and distinctly

glandulose (vs. not glandulose), petals bearing densely crenulate appendages (vs. subentire appendages), and by the distinct epigynous tube, ca. 1.5 mm long (vs. lacking). On the other hand, *O. heleniceae* appears to be related to *O. navioides*, being morphologically distinguished from it by propagating by means of short basal shoots (vs. long bracteate stolons, 15-20 cm long), leaf blades wider at base (13-15 mm vs. 6-8 mm wide), with denser spinulose margins (spines 1-1.5 mm apart vs. 2-6 mm apart), inner floral bracts longer than the sepals (vs. shorter than the sepals), sepals distinctly shorter (13-15 mm vs. 25-28 mm long), and by the anthers with obtuse apex (vs. apiculate apex).

As do most of the species of the "*subcomplex amoenum*," *Orthophytum heleniceae* grows on somewhat vertical rock crevices, forming densely grouped clumps. The collectors also brought back seeds of this new taxon, which produced abundant specimens with leaf morphology identical to the mother plants, despite the presence in a nearby ravine of another species apparently closely related to *O. amoenum* (H. & O. Ribeiro, pers. comm.).

The name chosen for this new species honor one of its collector, Helenice Ribeiro. Helenice and her husband Oscar are bromeliad collectors in Rio de Janeiro and brought back from some trips to Bahia well documented specimens of Bromeliaceae which supported the study presented here.

New species in "*subcomplex vagans*"

Until now, *Orthophytum vagans* was considered the single member of a unique subcomplex in the complex of *Orthophytum* species with sessile inflorescence. Its long caulescent habit, with leaves more or less equally distributed along the stem, and the obtuse-cucullate petals, which are green colored with apical white margins that a somewhat clavate corolla, are responsible for its unusual general appearance in the genus. It was, indeed, a pleasant surprise to discover another member of the "*subcomplex vagans*" during a recent expedition to locate wild populations of *O. vagans* in the west region of Espírito Santo State, north of Vitória City.

Figure 13. Close up of a flowering plant of Orthophytum zanonii in habitat during the dry season. Photography by E. Leme.

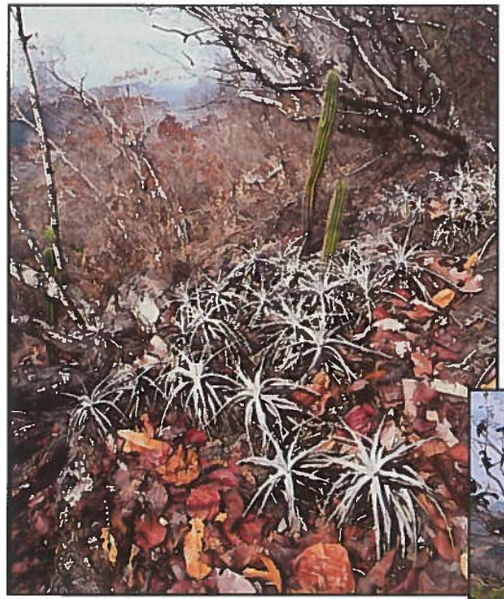

Figure 14. *Orthophytum zanonii* grows terrestrially or on rocks on drier slopes covered by deciduous forest. Photograph by E. Leme.

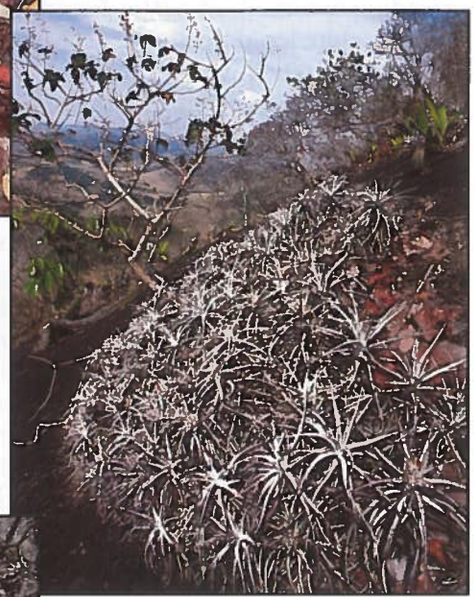

Figure 15. When fully exposed to sun light, *Orthophytum zanonii* develops denser clumps resembling a sea coral, and the color of their leaves become completely obscured by a dense layer of white trichomes Photograph by E. Leme.

Figure 16. *Orthophytum zanonii* photographed in 2000 at the type locality during the rainy season, showing reddish upper leaves around the inflorescence at anthesis not obscured by the trichomes. Photography by M. Zanoni.

Orthophytum zanonii Leme, sp. nov. **TYPE**: Brazil, Espírito Santo State, County of Pancas, locality of Laginha, Pedra do Vidal, property of Vidal Krause, ca. 300 m, 16 Aug. 2003, *E Leme, M. Zanoni & E. Colnago 5930* (Holotype: HB). FIGURES 13-17.

Ab *O. vagans* M. B. Foster, cui affinis, foliis utrimque perdense albo-lepidotis, coriaceis, supernis per anthesim interdum concoloribus, marginibus ascendentibus, spinis duplo brevioribus et inflorescentia manifeste composita differt.

Plant terrestrial or saxicolous, very long caulescent with branching stem 20-50 cm long, 1.5-1.8 cm in diameter, propagating by branching and rerooting from maturing sections of the stem, as well as by shoots from the inflorescence base. ***Leaves*** densely and equally arranged along the stem, spreading-recurved; ***sheaths*** broadly ovate, ca. 3.5 x 2.5 cm, pale colored, densely white-lepidote and densely spinulose near the apex, glabrous toward base, completely covering the stem, coarsely nerved, fimbriate-desintegrated along the older portion of the stem; ***blades*** narrowly-triangular, 10-25 cm long, 1-1.2 cm wide at base, strongly coriaceous, distinctly channeled with upright margins, abaxially completely covered by a thick layer of white trichomes, adaxially densely covered by white trichomes, greenish to reddish

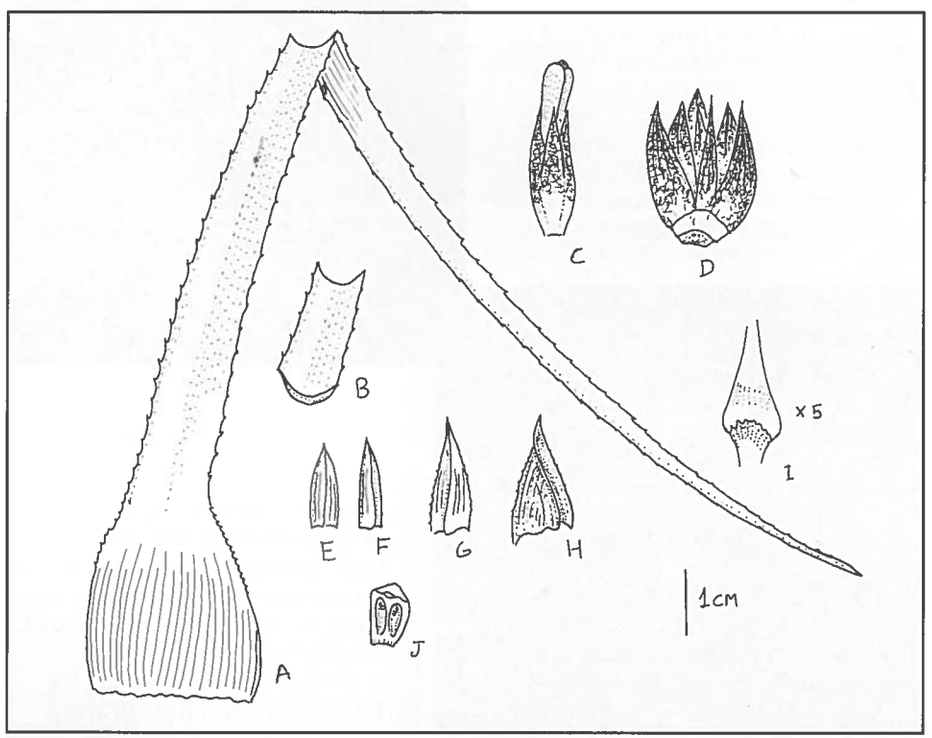

Figure 17. *Orthophytum zanonii*. a) leaf; b) cross section of the leaf; c) flower; d) fascicle; e) anterior sepal; f) posterior sepal; g-h) floral bracts of the fascicles; i) petal appendage; j) longitudinal cross-section of the ovary. Drawing by E. Leme.

but the color completely or almost completely obscured by the white trichomes, trichomes sometimes forming crossbands, apex attenuate-caudate, ending in a pungent spine, margins densely spinulose, spines subtriangular-uncinate, antrorse, reddish-brown, densely white-lepidote toward base, 0.5-1 mm long, ca. 0.5 mm wide at base, 3-5 mm apart, at anthesis the upper blades remaining concolor or sometimes becoming reddish around the inflorescence; ***scape*** absent. ***Inflorescence*** sessile, corymbose, densely bipinnate, ellipsoid to subcapitate, 3-3.5 cm long, 2.5-3 cm in diameter (excluding the primary bracts); ***primary bracts*** foliaceous, gradually reduced in length toward the inflorescence apex but distinctly exceeding the branches; ***fascicles*** 5 to 8 in number, polystichously and densely disposed, nearly sessile, flabellate, complanate, 20-22 mm long (excluding the petals), ca. 1.5 cm wide, 2 to 3-flowered; ***floral bracts*** of the fascicles narrowly triangular, strongly carinate, about equaling the sepals, greenish, nerved, densely white-lanate except for the apical spine, 18-19 x 6-10 mm, coriaceous toward apex, apex acuminate, ending in a pungent spine, margins spinulose, those of the simple apical part of the inflorescence subfoliaceous, exceeding the flowers. ***Flowers*** ca. 25 mm long (including the petals), sessile, densely arranged, odorless; ***sepals*** narrowly oblong-lanceolate, apex acuminate, 13-14 x 3-4 mm, free, entire, greenish, rigid but not coriaceous, densely white-lanate, the posterior ones alate-carinate with keels decurrent on the ovary, the anterior one carinate or nearly so; ***petals*** sublinear-spatulate, obtuse-cucullate, ca. 18 x 3.5-4 mm, erect at anthesis, green except for the whitish apical margins, bearing 2 downwardly oriented, cucullate, crenulate appendages ca. 5 mm above the base, as well as 2 conspicuous longitudinal callosities about equaling the anthers; ***anthers*** ca. 3.5 mm long, base obtuse and apex obtuse, fixed at 2/5 of it length above the base, strongly compressed laterally at anthesis; ***stigma*** simple-erect, blades suberect, densely papillose, greenish; ***ovary*** ca. 7 mm long, ca. 6 mm wide at apex, slightly complanate, trigonous; epigynous tube inconspicuous; placentation apical; ovules narrowly obtuse. ***Fruits*** unknown.

PARATYPE: Brazil. Espírito Santo: County of Pancas, locality of Laginha, Pedra do Vidal, property of Vidal Krause, ca. 300 m., 16 Aug. 2003, *E Leme, M. Zanoni & E. Colnago 5941* (HB).

This new species is closely related to *Orthophytum vagans*, but can be distinguished from it by the leaves very densely white-lepidote (vs. glabrous or nearly so adaxially), coriaceous (vs. thinly if at all coriaceous), concolor or sometimes becoming reddish at anthesis (vs. the upper ones becoming bright red to orange toward base at anthesis), margins ascending (vs. subspreading to slightly recurved) with spines twice shorter (0.5-1 mm vs. 2-3 mm), as well as by the inflorescence distinctly compound (vs. simple).

Orthophytum zanonii grows on the drier slopes of the hill called Pedra do Vidal, about 300 m elevation, which is covered by a deciduous forest. This bromelioid was observed during the drier season - indeed a very severe drought lasting for almost one year - when the trees lose all or nearly all of

their leaves. It grows in slightly inclined rock outcrops inside the forest and in nearby open areas fully exposed to sun light, forming large and very dense terrestrial or saxicolous clumps with leaves varying in size and color (i.e., greenish, reddish or whitish) depending on the intensity of the exposure to sun light. It is interesting to observe that the specimens photographed three years earlier by Marcos Zanoni, during the rainy season, at the same place of collection, showed the upper leaves becoming more reddish around the inflorescence at anthesis, differently from the specimens we collected with concolorous leaves at anthesis. The very dense layer of white trichomes obscuring the leaf color in the dry season may explain why the feature portrayed by Dr. Zanoni was not observed during collection of the type.

The new species is a tribute to one of its collector, Marcos Zanoni, from the city of Vitória, Espírito Santo. Dr. Zanoni is a very enthusiastic collaborator in field activities in Espírito Santo and is helping extensively in the current *Orthophytum* project. He took us to the site where this new taxon was found because he recognized it in a previous collection as something related to *O. vagans*.

Acknowledgments

The author thanks Helenice and Oscar Ribeiro, Marcos Zanoni, Euclidio Colnago and Vidal Krause and his adorable family for their generous gifts of living specimens used in this work as well as for their support during field activities.

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Introducing: *Aechmea azurea*

Harry Luther, Mulford B. Foster Bromeliad Identification Center

Many years ago (the late 1960s) the BSI seed fund distributed under the name *Aechmea fendleri* an inferior form of *Aechmea azurea*. The plants were weak with poor coloration including nearly white petals. I haven't seen material of this in North American horticulture for some time, but Australian growers seem to have retained it perhaps out of a sense of nostaligia.

We all now have much better plant material available that even matches the published description with its blue petals. These plants make neat rosettes of bright green foliage to about 35 cm in diameter and flower easily and regularly. They do not appear to be especially cold hardy and need protection from frost and freezing. We can thank Elton Leme for this introduction.

Figure 18. *Aechmea azurea* (Leme 316) flowering at the Marie Selby Botanical Gardens. Photograph by Vern Sawyer.

Where Have all the Nurseries Gone?

Herb Plever[6]

I have been growing bromeliads since 1961. During these forty-three years I have ordered thousands of bromeliads for myself and for the New York Bromeliad Society from retail and wholesale nurseries and from individual collectors, and I saved all of the records of these transactions: invoices, lists, catalogs, receipts, etc. Needless to say these papers took up a lot of space.

When I found I could no longer fit any more records in the file cabinet, I decided it was time to make room by shredding everything except the catalogs. But one cannot just destroy documents without rereading them, and the experience of perusing these papers was akin to reliving past history. I was astounded to find that I had dealt with 56 retail nurseries and collectors and 10 wholesale nurseries that sold plants by mail order.

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Think of it! Early in the BSI's history, bromeliad growers had the luxury of being able to order plants from many, many sources; now there is only **one** good retail, mail order nursery - Mike's Bromeliads - with a large range of species and cultivars of many genera (Alberts & Merkel is now primarily an orchid dealer with a few bromeliads). There are five retail tillandsia nurseries; four of them advertise in the Journal. Three of these, Birdrock Tropicals, Russell's and Tropiflora also have a moderate selection of other genera, and there is one strictly wholesale tillandsia nursery.

Fifty six retail dealers have been reduced to **eight**. So - to paraphrase the title of Pete Seeger's song: Where have all the nurseries gone? I believe the drop in nurseries is closely related to the significant decline in membership and activity in the BSI, and it is likely that we will find the same causes for both problems. In the "green" years of the 1970s and early 1980s we had the most retail nurseries and our highest BSI membership. Now our membership has declined to less than half of that high point. An assessment of the possible reasons for the decline should be made, not merely for historical reasons; understanding the causative process may enable us to find solutions for this general malaise. I am mindful that the problem is not peculiar to BSI - many other plant societies have experienced a similar or worse decline in membership. Still it may instructive and interesting to review the history.

BSI was founded and then organized in the early 1950s. By the 1960s we had sixteen nurseries and two collectors selling bromeliads at retail via mail order:

ALBERTS & MERCKEL - Boynton Beach, FL. with a moderate list of popular species but few tillandsias. Still in business.

ALVIN SEIDEL - Brazil, with a good range of Brazilian bromeliads. Still around.

BURT'S BROMELIADS operated by Ethel Burt of Jupiter, FL. She offered a broad list of most genera incredibly priced at $1 to $2!

CALIFORNIA JUNGLE GARDENS - Los Angeles, CA. David Barry, Jr., a founder of B.S.I. offered an extensive list of species of all genera.

CORNELISON'S BROMELIADS run by Frank Cornelison of Ft. Meyers, FL. He also offered a broad list of many genera with excellent prices.

FANTASTIC GARDENS - Miami, FL 1960s to 1970s. Broad range of all genera. Originally run by bromeliad pioneers Bob and Katherine Wilson before they moved to Costa Rica. Then operated by Tom Mentelos.

FUSCHIA LAND - Los Angeles, CA - Collector Mike Kashkin sold a fair range of genera.

HOLMES NURSERY run by Jack Holmes in Tampa, FL. Sold aechmeas, billbergias and neoregelias.

HUMMEL'S NURSERY - run by the great plant grower and hybridizer Ed Hummel in Carlsbad, CA. He was sensitive and independent, but if he liked you he would sell you mature or blooming species and his hybrids for $3 to $4! He had a fair range of species and hybrids but no tillandsias.

JUNGLE PLANTS & FLOWERS operated by Fritz Kubisch of Culver City, CA. with a full list of species of most genera.

KENT'S BROMELIAD NURSERY run by Dr. Leonard Kent in Los Angeles, CA and then Vista, CA. with a big list of most genera. (By the end of the 1980s KENT'S became a huge, commercial, wholesale bromeliad nursery run by Jeffrey, Larry and Michael Kent, - but no mail order.)

WERNER KRAUSPE of Los Angeles, CA. He sold only tillandsias.

ELIZABETH NAUNDORFF of Quito, Ecuador had a limited list of important and rare Ecuadorian bromeliads.

MARZ BROMELIADS - Moorpark, CA. The friendly Sally Marz offered a broad list of species at good prices.

OAKHURST GARDENS operated by Jim Giridlian of Arcadia, CA. with an extensive list of species.

PLAZA NURSERY in Buena Park, CA. with a broad list of genera.

ORCHIDEARIO CATARINENSE run by Alvim Seidel of Santa Catarina, Brazil. Offers a huge list of Brazilian species. Still in business.

SEABORN DEL DIOS operated by Bill and Essie Seaborn of Escondido, CA. with a fairly good range of species.

ERVIN J. WURTHMANN (also VELVA DEAN'S TROPICALS) - Tampa, Fl. Ervin's catalog was heavy in neoregelias, tillandsias and, especially, vrieseas including his find vriesea hybrids. (Ervin passed on this year.)

Who were or are these people? They were, first and foremost, growers with a love for and dedication to bromeliads. They did not expect to become rich when they invested their time, money and lives into creating small retail enterprises; they hoped they might be able to earn a living doing what they loved to do. Of the eighteen bromeliad sellers from the 1960s, most have died; one no longer sells at retail or mail order, and only two are still in business. I will return to this issue later in this article.

During the 1970s and early 1980s the above eighteen retail, mail order nurseries and collectors were joined by 37 others:

AIREL GARDENS - Houston, TX. Small selection of many genera

BELTON'S PLANTS - San Diego, CA. Big list of achmeas, cryptanthus and neoregelias.

BENNETT'S BROMELIADS - Winter Park, FL. offered achmeas, cryptanthus and neoregelias and a few other genera.

BIRD ROCK TROPICALS - Carlsbad, CA. 1981 to date. Operated by Pamela Koide with the most comprehensive list of seed grown tillandsias as well as a selection of other genera.

D. & M. ENTERPRISES - Bogue Chitto, MS. Wholesale and retail tillandsias. Still in business.

KLAUS VON BISMARCK - Lima, Peru - offered local tillandsias for $1 each.

ALFRED BLASS - Munich, Germany. The greatest collector of tillandsias, now deceased. He was not in the bromel business, but he would swap or sell a few of his extras for $2 to $6.

BLOSSOM WORLD - Bud Martin, Sanford FL. Has abroad list of many genera and is still in business.

BOB BURSTROM - Plantation, FL. Mostly vrieseas.

BOE'S BROMELIADS & A BATCH OF BROMELIADS - Art Boe. Guatemalan tillandsias. Still in business.

CHANNELVIEW NURSERIES - Channelview, TX. Limited list.

CONT'D ON P. 80

Bromeliads: Believe it or Not!

Ronald W. Parkhurst[7]

It never ceases to amaze me how Bromeliads will adapt to their environment. I was growing this Grant Grove *Neoregelia* hybrid in my greenhouse and unannounced to me, this Neo fell off of the bench and landed upside down with the bottom of the pot facing upwards. The mother plant struggled under the circumstances trying to find the light and even sending up offshoots to counter balance the gravity! A friend of mine was walking through our nursery and found this plant and wanted to know the story behind it. After hearing what happened and the tenacity of this plant, he wanted it for his collection. Moral of the story? "When life gets turned upside down, there's always light at the end of the tunnel, even though it may come from an unexpected direction!"

Editor's note: Do you have a "Bromeliads: Believe it or Not!" story or pictures of bromeliad oddities? Send it to the BSI Believe it or Not! department, 811 South Palm Ave., Sarasota, FL 34236 USA.

Figure 19. The power of positive thinking. A gravitationally challenged *Neoregelia* overcomes. Photograph by Ronald Parkhurst.

[7] Olinda, Maui, Hawaii

×*Androlaechmea* 'O'Rourke'

Derek Butcher, BSI Cultivar Registrar

In the early 1990's Fay O'Rourke obtained a plant called *Androlepis skinneri* but when it flowered, her inquisitive mind told her that it was incorrectly named. Who else had received a plant from the same source and looked no further?! It has been hinted that this hybrid may be linked 40 years ago to Mulford Foster. If it is, then Fay's action is even more meritorious. Fay consulted the current Floridian experts as to its proper identity. Clearly it was a bigeneric because there is only one species in *Androlepis*! No doubt it was called *Androlepis skinneri* because this was where the seed came from, BUT who was the bearer of the pollen ? The final consensus was an *Aechmea distichantha* of some sort.

Its photo featured for some time on the Florida Council of Bromeliad Society's (http://fcbs.org) "What is it section" website, and in November 2003 Mike Andreas finally bit the bullet and considered it should be registered as a bigeneric and acknowledging Fay's efforts. So ×*Androlaechmea* 'O'Rourke' came into existence.

This beautiful cultivar name but will remind us all of Fay who passed away in December 2003 and will be a loss not only in Florida but to the Bromeliad world. She was an active member for over 16 years of the Florida West Coast Bromeliad Society as well as being an office bearer in several positions. It is especially a loss to me because she was one of my 'Friendly Ferrets'. A 'Friendly Ferret' is one who helps me in my role of Registrar by asking questions about plants which are not recorded in the Bromeliad Cultivar Registry. This will be a reminder in the future to those who grow this plant that there is a bit of history behind some of the names given to cultivars.

Figure 20. ×*Androlaechmea* 'O'Rourke'. Photograph by Michael Andreas

NURSERIES - CONT'D FROM PAGE 77

CULTIVOS FLANDRIA - Buenos Aires, Argentina. Had a small list of aechmeas, guzmanias, vrieseas and neoregelias. Originator of Neoregelia 'Flandria' (cultivar of the 'Meyendorfii' form of N. carolina tricolor.)

DANE & CO. - Corpus Christi, TX .Tillandsias by Charlie Meilleur.

ECUAFLOR - Quito, Ecuador. Many tillandsias @ 75¢ to $1 each.

EXOTIC GARDENS VALLE DE ANGELES - Honduras. E.G. Kamm. Big list of tillandsias @ 50¢ to $2.50 each.

EXOTIC GARDENS - Holmdel, NJ 1980s - Broad list of genera

EXOTIC BROMELIADS - Lakeland, FL, Charles Coolbough. Broad list of genera in the 1980s.

GARRETSON'S NURSERY - Escondido, CA with a fair list of genera.

HANS GULZ - Frankfort, Germany. Broad list of genera except no tillandsias.

HEINLEIN NURSERY - Homestead, FL Fair range of genera, but no vrieseas.

HILL'S RAINGREEN TROPICALS - Herbert Hill, Jr. Lithia FL. Outstanding, well grown hybrids at retail in 1970s to early 1980s. Then strictly wholesale with no mail order.

HIS & HERS - Fullerton, CA 1977-78 Broad list of species but no tillandsias.

JENKINS NURSERY - Covington, LA. Good range of genera.

MARCEL LECOUFLE - Boisy St. Leger, France. Select list.

PAUL LOWE - Goulds, FL. Fair list of species.

DOROTHEA MUHR - El Aguilar, Jujuy, Argentina. Andes Mountain tillandsias which this fabulous woman sent in shoe boxes @ 30¢ to 60¢ each. She knew her stuff and her identifications with these tillandsias, generally unknown at the time, were on the money.

ROD MCLELLAN & CO. - Watsonville, CA. aechmeas, cryptanthus, neoregelias.

PERNER'S BROMELIADS - San Antonio, TX. Broad list of genera.

THE PLANT SHOP - Reseda, CA. Fair range of genera.

RAINFOREST FLORA - Gardena, CA. Originally called GENUS TILLANDSIA in Los Angeles, CA. Extensive list of retail and wholesale tillandsias. Run by Paul Isley and Jerry Robinson.

RUSSELL'S BROMELIADS - Sandford, FL. Specialized in tillandsias at retail and wholesale mail order.

SPRINGHILL NURSERY - Gainesville, FL. Broad range of species.

SUD-PFLANZEN IMPORTE - (Wolf Griese) Wiesbaden-Erbenheim, Germany. Collected tillandsias many rare tillandsias from Central and South America.

TALNADGE FERN GARDENS - Chula Vista, CA. Broad list of species.

TROPIFLORA - Bradenton, FL. Run by Dennis Cathcart. Offered a select list of species and hybrids and broad list of tillandsias. Operation later changed to periodic offerings from the interesting CARGO REPORT which is mailed out to B.S.I. members.

VELCO'S BROMELIAD NURSERY - Delray, CA. Tillandsias imported by Gerson Velick.

WILLIFORD'S NURSERY - Smithfield, NC (Run by Ethel Burt) Broad list of species.

Of these 37 nurseries and collectors only 6 would mail order plants at retail. Many of the operators have done have gone out of business for economic and/or health reasons. Operating a plant nursery is a labor of love. It takes an investment of hard work and very long hours just to survive. Once we came out of the depression after World War II, economic costs have inexorably risen without a stop. By the time the "green" years ended and BSI memberships began to continually drop, the higher costs for labor, electricity, fuel, plants, potting materials, fertilizer, boxes, paper, etc., simply made it impossible for a small dealer to stay in business. Those who survived such as Kent's' Bromeliads, DeLeon's Bromeliads and Kerry's went into large scale, automated, commercial production of a limited number of plants to sell to supermarket chains, etc. A few smaller, quality wholesale nurseries such as Hill's Raingreen Tropicals manage to get by working long hours, 6 to 7 days a week and using few employees.

If I long for the days when we had many retail nurseries to buy from, I recognize that we'll not see a return to those days. Our local society is happy to give fully support Mike Kiehl and the few tillandsia nurseries because they are the only sources for a broad range of bromeliads at retail mail order. But I do not deprecate those firms that have become large commercial dealers, because they perform a great service in getting mass distribution of flowering bromeliads into the market place. Supermarkets and household chains are selling thousands of these plants to the public; for the first time you can see flowering bromeliads available at much lower prices than in fancy florists. There is a mass base growing from which the affiliates of BSI can draw new members - when we learn how to get to them and work at it.

Bromeliads are already the most used plant by interior designers, movie and television set designers and magazine art directors, more so than even orchids. But orchids have a mystique with the public that we must learn to create. Perhaps this is a job for the Board of Directors to explore. If we are ever to get more retail nurseries to open, it only will be when there is a demand for plants from a much larger membership of BSI. But before we can study how to reach the public for membership, BSI must have greater support from the current membership of its affiliates.

It is unfortunate to see that no more than 20% to 30% of affiliate membership are members of BSI. It can hardly be for economic reasons, when most people spend more than $25.00 for a movie and dinner. No, it is a matter of people not seeing the importance of BSI to themselves and their affiliates. People ask: "What does BSI do for me?" The answer is plain to see: "BSI is the glue that keeps growers and affiliates in contact with one another, from the U.S. to Europe to down under Australia and New Zealand." It is through BSI that we learn what other growers are doing. It is BSI that makes possible world conferences that bring growers together to meet and discuss culture and identification. When a large number of affiliate members are persuaded to join BSI, it can function more effectively with the additional support and financing.

To paraphrase President Kennedy's inaugural conclusion - ask not what BSI can do for you; ask instead what you can do for BSI.

PLANT PATENTS: CONT'D FROM P. 65

1. **Distinctness:** quantitative and qualitative differences between the new and existing varieties must be objectively established and recorded. Morphological characteristics, especially those least affected by environmental factors, are preferred. However, tests such as comparative DNA or protein profiles are acceptable as supporting evidence. Clear repeatable varietal differences must be demonstrated. Performance attributes can also be included as distinguishing characteristics provided they are clear and consistent.

2. **Uniformity:** Unless the UPOV technical guideline on the species indicates otherwise, the required standard of uniformity for each type of propagation is set out below:

(A) In vegetatively-propagated or fully self-pollinated varieties, the number of off-types (plants which do not conform to all the variety's distinctive characteristics) must not exceed the numbers below:

Number of plants or plant parts measured (followed by the number of Off-Types) 5(0); 6-35(1); 36-82(2); 83-137(3).

(B) For partially self-pollinated varieties, the allowable number of off-types is doubled.

(C) In cross-pollinated varieties, a uniformity test based on a comparison of variances is applied. Measured characteristics are considered uniform if their variance is less than 1.6 times the average of the comparator varieties' variances.

3. **Stability:** A variety is deemed stable if it remains true to description after repeated propagation or reproduction. Breeders of varieties propagated from seed need to demonstrate stability by including two generations in the comparative trial (or a separate stability trial). If the variety is to be vegetatively propagated and is uniform, a demonstration of stability is not usually required. The applicant is responsible to ensure the new variety remains true to the description.

Specialised test UPOV guidelines for examining particular genera and cultivar groups are constantly being reviewed, ratified and implemented. Test growing trials of the new and comparator varieties can take up to 5 years or longer for PBRO Examiners to assess, but normally the whole PBR registration process is about 30 months, unless objections need addressing. Providing certain criteria are met, the PBRO may waive further test trials in Australia if a Report of a DUS test trial conducted under UPOV guidelines and procedures of a new variety granted PBR in a UPOV-Member country overseas is lodged by the applicant or QP. Typically required are an PBRO assessment of whether the most similar VCKs used overseas (including those in Australia) have been included in the overseas trial; if the new overseas variety is so clearly distinct from all Australian VCKs at the time that further DUS test growing is not warranted; if sufficient data, photos and descriptions

are available to publish in the Plant Varieties Journal, a statutory procedure for all Australian PBR varieties in both the accepted application and granted phases, to inform the public.

Any objections at any time by a third party must be resolved by mutual agreement or the PBR titleholder and objector should both seek legal advice from intellectual property rights attorneys and advise the PBRO of any court decision. Disputes often centre about the variety's physical ownership which is independent of intellectual property rights. The PBRO does not offer legal advice but if requested may provide court evidence in such cases. If a court objection is upheld, the PBRO may revoke the PBR final grant or cancel the pending application. Potential other legal challenges may be over claims that the new variety is an "essentially derived variety "(EDV) from a pre-existing variety. Genotype (or combination thereof) and phenotype become the issue. Currently the PBRO is required to adjudicate this EDV issue. Mutants (natural or induced) and progeny from selfed seed of a PBR variety are PBR -protected, with certain exemptions or limitations for agricultural crop seed. Any internal issues during the Application /Examination process not resolved between the PBRO and the Applicant may be arbitrated by the independent Administrative Appeals Tribunal. Proof of a Variety's distinctness is a common problem.

When / if the PBRO assesses the new variety and application meet all requirements for the PBR grant, the titleholder (grantee) is notified. Fees must be paid at the appropriate juncture, for the application, examination, full Registration (Certificate) and an annual renewal PBR fee. Other costs are for objections lodged, variation to application, change of assignment (titleholder) and extra administrative requests.

It is not the PBRO's role to assess the usefulness, marketability or aesthetics of a new variety-the titleholder formulates his own business plan for his new release. The titleholder may permit other growers to propagate and distribute his new variety by common law contract licence, paying royalties. The PBRO must authorise any request for the PBR Title to change ownership. In Australia, the PBR Title grants legal protection for 20 years for ornamentals (applicable to most bromeliads) and 25 years for trees, crops and vines. One PBR condition is that the general public must have reasonable access to the PBR variety. Once the PBR Title period expires, the plant variety comes solely into the public domain.

The new PBR variety released must have the PBR Logo and variety name on it's label. Required tag wording also is to the effect that the named titleholder has exclusive rights to produce or reproduce the variety (or plant material thereof); condition for propagation; offer for sale, sell, import, export or stock the material for any of the above purposes. In the horticulture industry, professional nurserymen, tissue culture laboratories and wholesale propagators are usually aware of such limitations and may arrange contract licences with the PBR Titleholder.

There are exemption clauses to the above restrictions for any act done in relation to a PBR Variety, which allow growing privately and for non-commercial purposes; for experiments, and for breeding other plant varieties (using the PBR Variety as a seed or pollen parent, or for gene technology). However, amateur growers and Plant Societies who sell PBR Varieties (so labelled or not) without approval from the titleholders are committing a punishable offence, particularly if substantial sales in Australia preceded the alleged violation dates of those PBR Varieties. Only in exceptional circumstances the Court may decree the defendants are deemed not to have been aware of or had reasonable grounds for suspecting the plants in question at the time were PBR Varieties. The PBRO or it's website database can provide a current list of PBR Varieties. It is the titleholder's responsibility to monitor any infringements and negotiate with offenders or instigate a lawsuit. Conversely, there are severe penalties for anyone found guilty of wilfully representing a non-PBR Variety as a PBR Variety. Remember, ignorance of the law is no defence against prosecution.

The Case in Europe

The PBR equivalent in Europe is the Community Plant Variety Rights (CPVRs), effective for all the 15-member European Union (EU) countries. The Community Plant Variety Office (CPVO), with headquarters in Angers, France administers the CPVRs under UPOV guidelines since mid-1995. This European-wide system operates in parallel with national systems but a new variety's owner cannot exploit simultaneously both a CPVR Variety and a national PVR equivalent -the CPVR takes precedence even if not registered first. A CPVR could not co-exist with a patent on the same variety until recently. Europe has a long, fine tradition in breeding exotic and indigenous cultivars for the floricultural, horticultural and agricultural industries. In the period April 1995-July 2003, 14,810 CPVR applications were filed from EU countries and 2,780 from foreign (non-EU) countries, about 60% of which were ornamental varieties. An ornamental CPVR Variety is protected for 25 years, unless the grantee relinquishes the title or the CPVO revokes the grant.

In member countries of the European Patent Office (EPO), the patenting of plant varieties, per se, was prohibited. However, the EPO Board of Appeals later determined that a claim directed to transgenic plants of more than one variety, but not an individual variety, is permissible.

The Case in the United States

In U.S.A. the Plant Variety Protection Office (PVPO) in Beltsville, Maryland administers the Plant Variety Protection Act (PVPA), passed in Dec. 1970, which covers only new varieties which are sexually -reproduced (by seed) or tuber-propagated, mainly agricultural crops, pasture grasses, vegetables and ornamental annuals, all regulated under UPOV guidelines. A plant variety can be doubly protected under a PVP and a Utility Patent for 20 years.

For an asexually-reproduced (vegetatively) variety excluding tubers in U.S.A., a plant patent offers legal protection for 20 years through the U.S. Patent and Trademark Office (USPTO) in Alexandria, Virginia. The variety must be novel, distinct and bred / discovered in a cultivated state (not wild-collected) and drawings / photos filed in the application claim.

Utility Patent applications in U.S.A. require stricter criteria but offer broader coverage for 20 years than other patents, i.e. breeding methods; inbred parental lines; sports, pollen and seed produced by the parents or claimed variety; phenotypic characteristics. The world's first patented bromeliad was M. Foster's Aechmea 'Foster's Favorite' in 1949. Patentable for transgenic and genetically-modified plants are novel cloned genes/ expression vectors; methods for producing the transgenic or G.M. plant, which must be novel, involve a non-obvious inventive step and be industrially useful. The claimed invention must not have been disclosed in the "prior art " (i.e. before filing the patent application). Naturally-occurring, essential biological processes are not patentable.

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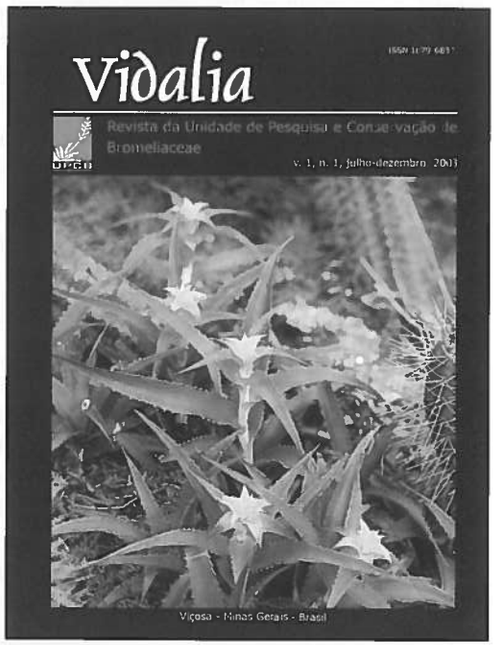
Vidalia, a New Scientific Journal on Bromeliads

Bruce Holst, Editor, BSI

The Center for Bromeliaceae Research and Conservation of the Federal University of Viçosa in Minas Gerais has begun issuing a new scientific journal devoted exclusively to publishing original scientific articles on Bromeliaceae. The journal, *Vidalia*, is named for two botany professors at the university, Prof. Waldomiro Nunes Vidal and Maria Ros·rio Ridrigues Vidal. During 30 years of work, they helped develop the herbarium, graduate program, and the botanical garden at the university, and published extensively on the flora of Minas Gerais and on plant morphology and taxonomy.

Edited by BSI Honorary Trustee and well-known author Elton M.C. Leme, the semi-annual journal will include articles on biology, ecology, taxonomy, and conservation of bromeliads. Articles may be submitted in English, Spanish, or Portuguese. Text and figures are in black & white. Volume 1, number 1 (July-December, 2003) is now available.



To order, or for more information, visit www.viadlia.ufr.br or write to vidalia@ufv.br. The surface mailing address is: *Vidalia*, Unidade de Pesquisa e Conservação de Bromeliaceae, Dep. Biologia Vegetal, Univ. Fed. de Viçosa-MG, Brazil.

Events Calendar

Australia

Sept. 9-12, 2004. *Central Coast NSW Bromeliad Society Show*, Held in conjunction with the Flora Festival which is a very big show featuring all things horticultural. Central Coast New South Wales Bromeliad Society. At Kariong on the Central Coast, NSW, Australia. 9:00 am -5:00pm except Sunday until 4:00. For more information, contact Fay Hagan, fayhagan@tac.com.au.

Sept. 11-12, 2004. *Illawarra Bromeliad Society Show*. Illawarra Bromeliad Society. Uniting Church Hall, Russell Street, Corrimal.

Oct. 14-17, 2005. *Bromeliads XIII - Australian Conference*. The Bromeliad Society of Queensland, Inc. Brisbane, Australia. The conference will include lectures, tours, sales, displays, and an auction and show. For more information, contact Bromeliads XIII Conference Committee, c/o Bromeliad Society of Queensland Inc., PO Box 565, Fortitude Valley, Queensland, 4006 Australia. E-mail: secretary@bsq.org.au. Web site: http://www.bsq.org.au/conference.html.

United States

Aug. 10-15, 2004. *World Bromeliad Conference*. Bromeliad Society International/Bromeliad Society of Greater Chicago. Rosemont, Illinois, USA.

Aug. 11, 2004. *School II of the World Conference Bromeliad Judges School Series*. World Bromeliad Conference, Chicago, IL. 8-5. There is a nominal fee and you must be registered for the school one week prior to the conference. For more information, contact Betty Ann Prevatt, 2902 Second St., Ft. Myers, FL 33916. Phone 239-334-0242 or e-mail bprevattpcc@aol.com.

Aug. 21-22, 2004. *Seminole Bromeliad Society Display and Sale*. Sanford Garden Club, 200 Fairmont Drive, Sanford, FL. 9-4. For more information, contact hallnan2039@cfl.rr.com, shipsley@msn.com.

Sept. 10-12, 2004. *Southwest Bromeliad Guild Standard Bromeliad Show and Sale*. Bromeliad Society Houston. Houston Arboretum and Nature Center, 4501 Woodway, Houston, Texas, USA. Friday Sale 12-5, Saturday Sale 9-5, Show 2-5; Sunday Sale & Show 11-4. Growers and showers from Texas, Louisiana and Florida. For more information, contact Allyn Pearlman - deliboys@houston.rr.com

Oct. 23, 2004. 2004 *Florida Extravaganza*. Florida West Coast Bromeliad Society. Plant Sale at: Florida Botanical Gardens, 12175 125th St N, Largo, FL 33774; Banquet and rare plant auction at: Holiday Inn Select, 3535 Ulmerton Road, Clearwater, FL 33762. Sale 9-4; banquet 6 pm; auction 7:30 pm. For more information, contact For vendor/sales information contact Gary Lund 727-586-5865 or glund@tampabay.rr.com. For rare plant auction donations, Michael Kiehl, 941-488-4011.

Oct. 30-31, 2004. *Bromeliad Sale*, Bromeliad Sale. Caloosahatchee Bromeliad Society. Terry Park, Palm Beach Blvd., Ft. Myers, FL. Oct. 30 9-5, Oct. 31 10-4. For more information, contact Brian Weber 941-355-2847 (brianweber1b@aol.com) Betty Ann Prevatt 239-332-0210 (bprevattbcc@aol.com).

In Memoriam:
BSI Honorary Trustee Olwen Ferris (1917-2004)

Geoff Lawn, BSI Director, International Region

Australian pioneer bromeliad grower and BSI Honorary Trustee Olwen Ferris died 4 March, 2004, aged 86 in a Nerang nursing home on Queensland's Gold Coast.

Born in the Southern Highlands town of Crookwell, New South Wales, Olwen was the eldest of 7 children whose parents were potato farmers. As a young schoolgirl Olwen took an interest in gardening from teachers and her parents. Child nanny, professional dressmaker and World War 2 army nurse were Olwen's early vocations, reflecting her compassionate, diplomatic nature and sense of loyal duty.

Settling in Sydney in 1947 with husband Hilton, an engineer, Olwen became a bromeliad enthusiast, corresponding with overseas botanical gardens, universities and institutes to gain further knowledge. Mulford & Racine Foster, Lyman Smith, Victoria Padilla, Beryl Allen and other early specialist growers became her friends from whom plants and seed were imported at a time when available varieties were limited. In the 1960-1970 period Adda Abendroth of Brazil sent much field-collected species seed to Olwen who became adept at this then little-known method and distributed progeny far and wide to increasingly-popular demand. From Brazilian seed came *Neoregelia* 'Ferris', a special red-bracted form of *N. concentrica*. Dr. Richard Oeser of Germany was another early penfriend through whom Olwen raised hybrid seed, particularly Neoregelias, producing such cultivars as *N.* 'Beefsteak', 'Happy Thoughts', 'Red Marble' and *Billbergia* 'Curly Top'. Modifying Dr. Oeser's method of seed-raising *Tillandsia* species he supplied, Olwen had considerable success. She created a handful of hybrids herself, including *Billbergia* 'Misty Steel', *Neoregelia* 'Olwen Ferris' and *Cryptanthus* 'Peppered Bronze'.

The Bromeliad Society of Australia Inc.(BSA) was formed in 1963 and Olwen joined soon after, becoming a committee member, plant display organiser and later President (1968-71), Editor of Bromeletter (1971-88), Assistant Editor (1988-92) and in charge of the Seed Bank for many years which she initiated. Olwen's additional efforts in promoting bromeliads—writing many articles, guest speaking, T.V. garden segment appearances and supporting shows—earned her life membership of BSA. The title BSI Honorary Trustee was awarded in 1970 to recognise her international contributions.

In 1972 Olwen and Hilton shifted to Queensland's Gold Coast, establishing her home-based Bromeliad Display Garden at Paradise Point. A thriving mail order business became Olwen's speciality and many bromelians including myself became devotees through Olwen's personalised service where many supplied items had hand-written individual cultural notes included. Olwen carried a big range for the period and growers near and far were introduced to plants previously known only in books. Olwen co-founded the Gold Coast Succulent and Bromeliad Society in 1973, eventually becoming a life member and later Society Patron. All the while Olwen attended and sometimes lectured at every biennial Australian Bromeliad Conference, becoming a familiar friend to all in Australian bromeliad circles. Round Robins were started up from the mid-1960s onwards and co-ordinated by Olwen for distant or isolated growers both nationally and internationally.

After Hilton died in 1994, with advancing age Olwen sold up her home and nursery collection but still maintained some bromeliads in the patio and shadehouse of her nearby retirement village unit. Here Olwen wrote a brief biography of her life with bromeliads in her book "Olwen in the Bromeliad Garden". In April, 1998 Olwen even gave an interview about her life to a news reporter which, although not entirely accurate, is on the Website: http:www.hammondvillagegoldcoast.com/villagefaces2.htm.

Such respect and admiration Olwen commanded that at the Bromeliad Conference in Adelaide (1995) the Bromeliad Society of South Australia presented Olwen with a "Grande Dame of Aussie Bromeliads" Award, a fitting tribute to a lovely, gracious lady who cared for and loved both people and plants equally. Her legacy is that many of us have living reminders of Olwen's "friendship plants" as she called them, whenever we view certain bromeliads in our collections.

Acknowledgements

My thanks to Olwen's sister and brother-in-law Margaret & Frank Matthew.

Figure 21. *Neoregelia* 'Dear Olwen' Hybridist Alan Freeman's cross of *N.* 'Manoa Beauty' x 'Olwen Ferris.' Photograph by Keith Golinski

Figure 22. Olwen Ferris. Photographer unknown.

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Bromeletter, Journal of the Bromeliad Society of Australia Inc., 1963-1995 issues.

Journal of the Bromeliad Society Inc. 34:3:125 (1984)

Journal of the Bromeliad Society Inc. 45:5:220 (1995)

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The classification of Honorary Trustee was established to recognize individuals whose distinguished contributions have advanced the purposes of the Bromeliad Society. To keep their names and memories alive for the Society, those who have passed away will be annually listed in the Journal. See inside back cover for a listing of the living honorary trustees. Please send corrections to the editor.

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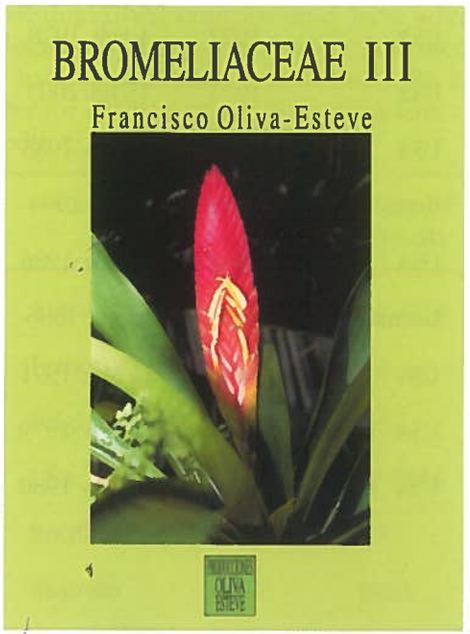

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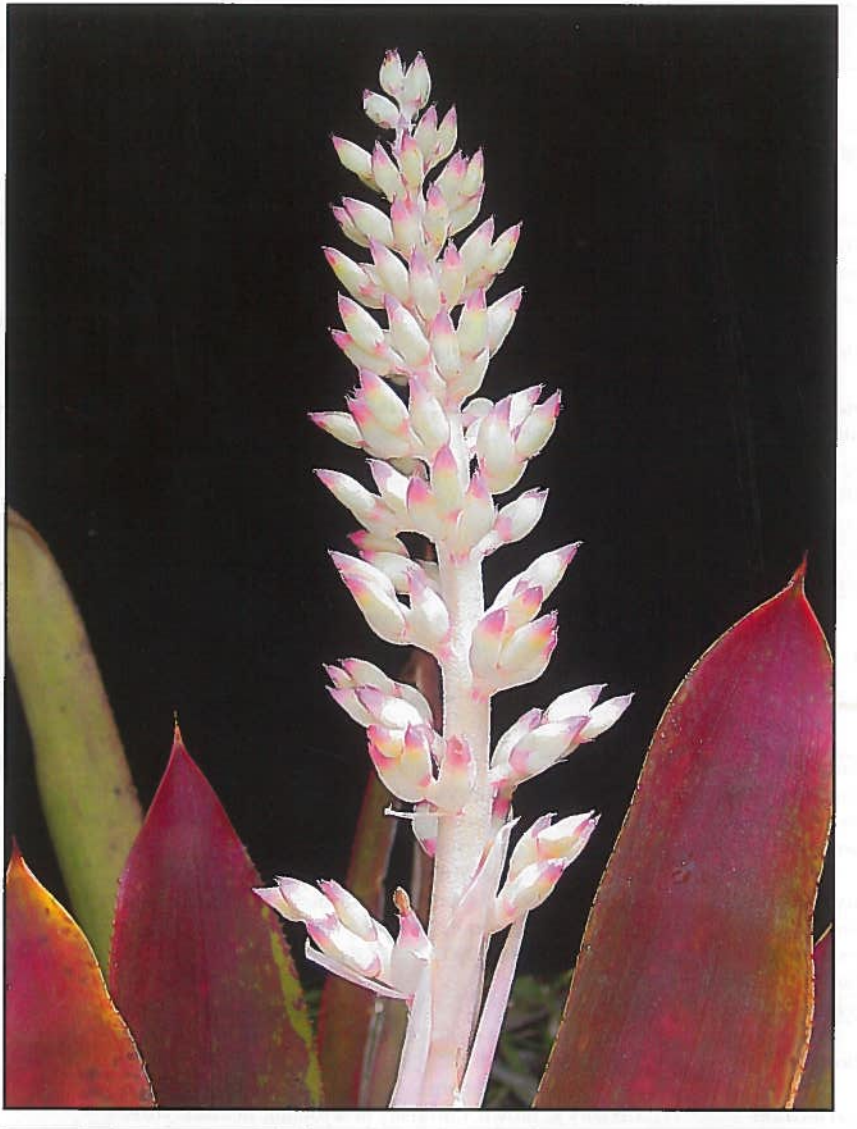

Figure 23. Exquisite colors of ×*Androlaechmea* 'O'Rourke' memorialize Fay O'Rourke, long-time member of the Florida West Coast Bromeliad Society. For more information about this plant, see the story in this issue by Derek Butcher about this cultivar.

Editor's Note: Affiliated Society Chair, Gene Schmidt, is putting together an e-mail list of all affiliated societies in order to communicate quickly and efficiently news from the BSI. If you haven't already sent him an e-mail address for a "BSI contact" for your local society, please do so (affiliates@bsi.org). Once compiled, this information can be listed on the affiliate web page and made available to all.

Thank you.