The Begonian

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The Begonian

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American Begonia Society

Founded January 1932 by Herbert P. Dyckman

Aims and Purposes

To stimulate and promote interest in begonias and other shade-loving plants.

To encourage the introduction and development of new types of these plants.

To standardize the nomenclature of begonias.

To gather and publish information in regard to kinds, propagation, and culture of begonias and companion plants.

To issue a bulletin that will be mailed to all members of the society.

To bring into friendly contact all who love and grow begonias.

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Cover

Front: Look at the gorgeous **B. 'Pink Minx',** a hybrid by **Kit Jeans Mounger** (*B. aconitifolia* x *B. U062*) grown by **Bob Koehler** that **Mary Bucholtz** found in her Florida travels.

Back: If you want to see a beautiful flower, just look closely at this female bloom on *B.* 'Shaun Henthorne', a hybrid by **Mike Kartuz** registered by **Charles Henthorne** in this issue. And the flower cluster is gorgeous.

In This Issue

Before you in this issue are grand adventures both geographic and scientific. First, **Thelma O'reilly** gives us a glimpse of what we will see at this summer's California convention, then we follow **Mary Bucholtz** on her travels north and south before we enter the new world of genetic research with **Laura Forrest**. Back to the car to join **Rekha Morris** in her further adventures in Mexico. Then we go and have a cool drink with Bill Claybaugh in his shade house in Houston. Who needs a travel agent when they have the *Begonian*?

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Quick

Check your mailing label. If it reads **200307 or 200308**, your membership is about to expire. Please renew! We don't want to lose you.

President's Message

The Winter Board Meeting in Tampa was a great get-together. Our hosts, the University of South Florida Botanical Garden, the New Tampa Branch and Dale Senna outdid themselves in feeding us and providing us with meeting space for our seminars, the board meeting and plant sale.

A number of interesting topics were brought up and addressed at the board meeting including a proposal for some new awards and revision of existing awards, discussion about utilizing **Ross Bolwell** of Australia to create and distribute a broadly useable database of Begonia cultivars, a continuous updating of the Buxton Checklist, and a proposal to assure the future availability and safeguarding of **Jack Golding's** species research documents. **Mary Bucholtz** presented the New Tampa branch with its American Begonia Society Branch Charter.

Additionally, I appointed a working committee consisting of **Janet Brown, Mary Sakamoto**, **Joan Coulat**, **Bill Claybaugh**, **Gene Salisbury**, **Charles Jaros**, **Tim Anderson**, **Mary Bucholtz** , **Maxine Zinman** and **Johanna Zinn** to address the future of The American Begonia Society. The committee is asked to organize itself, assign areas to individual members if they choose and have a preliminary report for the Southwest Regional Meeting in May. The areas of concern are our shrinking membership, our ageing membership, how we use the internet and how it could be integrated in our publications, what we can do to attract younger members. I would expect the committee would work with the various committee chairs of the Society as well as **Freda Holley** and **Kathy Goetz** in their examination of the Society as it exists today.

The ABS has a long history of growing, sharing, researching, hybridizing and promoting begonias. We have a strong culture of functional, informal organization that is non-hierarchical and has open discussion and debate on a wide range of issues. Additionally, members share plants, seed, and information about begonias and new members are readily accepted. The atmosphere is collegial, but strongly held differences are expressed. We don't want that culture to change. We have a blend of branch members and subscription members, also known as members-at-large. We have to serve the needs of both groups and in the future we will possibly migrate to a class of member who is an Internet member.

The question to be answered by the committee is how do we get from here to there without tearing ourselves apart or dwindling away as we lose members to the inevitable effects of ageing? We cannot be passive and survive over the long term. We need to have an acceptable plan and take charge of our future.

If you would like a copy of my memo to the committee, write to me or e-mail me at the address in the directory of officers and I will send you one. If you have thoughts on any of the topics the committee is addressing, contact any of the members with your views. The input to the committee should be from as many members as possible. There will be a presentation of their report in progress at the annual meeting in San Diego. See you there.

Howard Berg

San Antonio in May! San Diego in August!

Begonia Research Search

I am wondering whether anyone might be able to help me, I am a PhD student at the Royal Botanic Gardens in Edinburgh studying Begonia. Specifically, I am looking at the evolution of winter flowering in *Begonia socotrana*.

I have isolated a particular gene that we think may be involved in short day (winter) flowering. Now I am trying to design an experiment looking at whether or not the *B. socotrana* version of this gene is found in winter flowering hybrids with *B. socotrana* ancestry. This is as opposed to the copy of this gene from any other parental plants being found. If the *B. socotrana* gene is found in all winter flowering hybrids (but not in any summer flowering hybrids) then it would provide some nice evidence that this gene might be involved in conferring winter flowering on these plants.

In order to do this I am desperately trying to find winter flowering hybrids with *B. socotrana* ancestry. However, the tricky part, I need to find hybrids that are 'further developed' than F1's. In other words, an F1 that has been self-pollinated, a backcross, or a *socotrana* hybrid that has been crossed with something else. If I just look at F1's the genetic material from both parents will be present, meaning I cannot follow the inheritance of the *B. socotrana* copy of the gene.

From what I can find out it seems that Hiemalis hybrids (*B. socotrana* x South American tuberous Begonias) are propagated vegetatively from F1 crosses. The Hiemalis -like Begonias seem to flower all year round - although summer flowering crosses would be okay. The Cheimantha hybrids (*B. socotrana* x *B. dregei*) I am not sure about, but I think are also propagated vegetatively from F1's.

I was therefore wondering if anyone knew of any *Begonia socotrana* based hybrids, other than simple F1 crosses, that I might be able to use.

Many thanks,

Sophie Neale
Royal Botanic Gardens Edinburgh,
20A Inverleith Row, Edinburgh,
EH3 5LR,
Scotland

Editor's Notes

Thinking of Morris Mueller's article on page 101, I am reminded that coming up in a few years is the 75th birthday of ABS in 2005. Wouldn't it be wonderful if we could undertake to write the history of ABS - perhaps each chapter could take one or two decades; everyone could do research and one member write it up. We have such a rich history, most of it coming to us in bits and pieces by word of mouth. What a wonderful birthday gift a printed history of our society would make! **Bruce Boardman** - Research Chairman, are you listening? You could gather a committee beginning with Morris and make it happen!

On the *Begonian*. Last issue the printer had problems; they were late; the color was poor; and there were other problems as well. As it happened, they had to reprint the entire issue and even so... They have promised to correct all these problems - we shall see how it goes with this issue. As I think you will agree, they have done excellent work until then, so we must hope for the best.

My thanks to all who have responded to my pleas for materials. Please keep them coming. Branch shows are beginning soon; I urge you to take a few photos of plant winners or unusual entries and send me a short writeup to use in the *Begonian*.

Continued on page 99.

Magic Man

by Thelma O'Reilly, La Mesa (CA)

CHUCK ADES! The man whose begonia enthusiasm has created a new awareness for ABS and begonias in Southern California and beyond.

My introduction to Chuck and his charming, affable wife, **Joan**, occurred in 2000 when Tim and I attended our first Holiday Party for Larabee Society members of Quail Botanical Gardens. This wonderful public garden will be on an ABS tour in August. We were fortunate to be seated next to Foundation First Vice-President, Chuck Ades and his wife, **Joan**. Chuck and I quickly discovered our mutual interest in begonias.

Several months later anticipation was evident as members of Margaret Lee Branch arrived at the home of **Ed Bates** for a brief meeting before caravaning to Ades and Gish Nursery. We were welcomed by the Production Manager, her team of enthusiastic workers and Chuck Ades.

Many tables were filled with begonia plants in 4" pots. Across the aisle tables were packed with rooting begonia cuttings. We checked names for proper identification on many of the plants and toured the nursery which was overflowing with lovely mature specimens of begonias, ferns and other tropicals. Much time was spent capturing several eye-catching begonias on film, especially brilliantly colored *Begonia* 'Orange Magic' which is a **Michael Kartuz** cultivar.

Our Branch was invited again in January, 2001 to verify names on begonia plants, followed by a tour and refreshments. We were joined by **Brad Thompson**, donor of many begonia cuttings, **Bob Golden** and **Iris Bird**.

As I viewed the magnificent display of begonias awaiting our inspection, I was overcome with the same "Aura of Magic" I had felt which I first visited Woodriff's "Fairyland" and Anderson's "Daisy Farm". Chuck was an enthusiastic, generous host, permitting us to purchase begonias and companion plants after we completed working on begonia identification.

Touring the long main path and many aisles of the nursery my eyes were drawn to a tall, small-leaved specimen covered with masses of pink/red flowers and labeled *Begonia* 'Decker's Select'. It is featured in *Begonia Portraits* by **Alice M. Clark**. Now, in February, it is one of my few outdoor begonias in full bloom. It has survived the disastrous October 2003's fire and ash debris, intense heat, and a severe winter cold spell.

Chuck and Joan Ades have developed an interesting garden over the years. Visitors are welcomed by tall trees and plants in a tropical, jungle-like landscape surrounding a large lawn area, patio, entertainment area and their home. A special treat is the "Secret Garden". Its hidden path is surrounded on sides and overhead with a stunning collection of nature's rare beauties. It also includes a "Grotto", a "Hidden Jungle" , and a ghostly niche.

Attendees to the 2004 ABS Convention will have an opportunity to tour Ades and Gish Nursery. Chuck and Joan are hosting a luncheon in their wonderful garden.

As I shop in local stores and nurseries observing begonia plants with labels topped with an ABS logo, I murmured to myself, "Thank you, Chuck Ades, you are our "Magic Man".

You may write Thelma at10942 Sunray Place, La Mesa, CA 91941 or by phone at 619-670-0830.

Above left, ***Chuck Ades*** *gets plenty of bloom on* B. *'Normand' (see article last issue) when most cannot. And* B. *'Maria's Revenge' blooms are lush. Then, more blooms on* B. *'Orange Magic' wihich is almost large enough for* ***Thelma O'Reilly,*** *and* ***Chuch Ades*** *to hide behind. Only a glimpse of what we will see in August!*

How to Fill Those Days after Retirement

by Mary Bucholtz

You know, I always knew that work was interfering with begonias and a good time. But, I really never knew just how much until I actually retired and went on a begonia outing, or two, or three-----

There have been judging assignments I have been able to accept, extended days before and after conventions, and no more missing that Sunday tour because I was rushing to catch the flight that led back to "the job".

Let me catch you up on how I spent a few of my days in 2003. February brought the Tropical Flower show in West Palm Beach, beautiful begonias to judge, and an outstanding education display and information and sale booth presented by the Begonia Society of the Palm Beaches, and of course making contact with begonia friends. The enormous sales area was aglow with plants of all descriptions as well as plant related items. And, yes, I came home with a bit of both.

But let's go back just a few days before that Palm Beach Show. I drove to Sanford, FL to the home of **Helene** and **Charles Jaros**. That in itself is a treat, for Charles has an outstanding collection of begonias and begoniana. The same evening we picked up **Johanna Zinn** who flew in to Orlando from VA. **Maxine Zinman** was to have been with her, but an illness kept her in VA. **Nancy Mirgon** who has returned to FL drove over to join us for a couple of days. We made excellent use of our time: visits to greenhouses in the area, a visit to Cypress Gardens a few hours away, a visit to Marie Selby Botanical Garden in Sarasota and an evening at the Florida State Fair in Tampa. The fair has a wonderful horticultural display every year, and this year hybridizer **Bob Koehler** was a big winner with his magnificent begonias. He works at the University of South Florida Botanic Garden where Dale Sena is the curator of the begonia species collection. We were even able to spend a bit of time with Dale at the fair.

Finally, it was time to head south for our judging assignments, but you know there are a few begonia gardens and begonia friends in South Florida. The trip wouldn't have been complete without a visit to **Joyce** and **Doug Pridgen's** home in Miami for a peek at their pristine begonia collection and **Tim Anderson's** nursery housing all the begonias one could ever hope to own. In the Palm Beach area, must stops were **Bruce Pearson** and **Michael Marino's** fabulous Tropic World, Albert's & Merkel Bros., and The Garden of the Four Arts to see **Johanna Kitson's** ongoing landscaping plan for this hidden jewel of a garden. The Mount's Botanic Garden in West Palm Beach has a begonia garden that will just blow you away. It is landscaped and tended by the Palm Beaches Branch and done so to perfection.

Having thoroughly explored south Florida, I left Johanna and Charles, as they headed north to Sanford, and I headed south to spend several days with my daughter who was married last June and moved to Boca Raton.

March arrived with another judging assignment, the Philadelphia Flower Show. I feel most fortunate to have been

Florida color in a commerical display at the Palm Beach Tropical Flower Show, Palm Beach, Florida. Begonia 'Vodka' was used in a topiary in a commercial display at the Philadelphia Flower Show.

Below, in one of Janet Welsh's terrariums, clockwise from the top: B. U388, B. ciliobracteata (syn. ranaliorium), B. decora, and B. microsperma.

invited to judge this show several times and have been thrilled to see their begonia division grow over the years. The year 2003 was the first time this show has awarded the Best Begonia in the Show. The Philadelphia Show runs ten days and judging takes place on three different days. Most of the begonia judges are ABS members. Invited this year were **Judy Becker**, **Beth Castellon**, **Corliss Engle**, **Charles Jaros**, **Cheryl Lenert**, **Johanna Zinn** and **Maxine Zinman**. As at the Palm Beach Tropical Show, there is at the Philadelphia Flower show an enormous sales area, plants of all kinds and related items. Again the shopping bags were overflowing.

After the show, several of us were able to stay over and visit and tour the area with **Janet Welsh**. She, and her ever patient husband **Lou**, opened their home and hospitality to us. To see Janet's begonias is a lesson in how to grow and present a begonia. Janet is a long time exhibitor at the Philadelphia Flower Show, generously sharing her begonias with all. She has been awarded many times for her endeavors. Her plants are perfectly sized to their containers and meticulously groomed whether grown in pots, baskets or terrariums.

Though the PA landscape was covered with a heavy blanket of snow, we scouted out nurseries in the area including the magical Meadowbrook Farms, where the Delaware Valley Branch holds their meetings. Much to our delight, Meadowbrook has amassed quite an extensive collection of begonias as well as other horticultural delights. Longwood Gardens, a former duPont estate, is not too far, and was an exciting botanical adventure. You know, Pennsylvania has many antique shows and restaurants. Rest assured, we found those towns and shops and came away with majolica, moriage, jewelry and botanical prints, all depicting begonias.

Towards the end of March, Helene, Charles and I returned to Cypress Gardens to view their Spring Flower Festival featuring "the world's largest topiary display with more than two dozen enormous fantasy and real life figures, bedecked with begonia wardrobes." No doubt the tallest figure was that of an 18' bunny. There were ducks, birds, butterflies, fish, a swan, an owl, a snail, a centipede, oh so many, larger than life, and completely covered in semperflorens. What fun to see them all! Would you believe at one of the gift shops, Charles found an original watercolor of a begonia. In another gift show I found stone coasters with begonias on them, and we both found refrigerator magnets with semperfloren begonias. (DO you think they knew they had two nuts, uhh - customers, who would buy anything with a begonia on it?)

As summer arrived, I fell into the routine of tending my own collection of begonias. Many of you know what a challenge it is for me to successfully grow begonias on the enclosed terrace of our condo. You see it is glass on three sides, with no outside ventilation. Add to that a south, southwest exposure and the hot, hot summers experienced here in north Florida, definitely alien territory for begonias. I have small fans attached to shelves of my two light stands, two ceiling fans and two floor fans, so the air does move, but most summer days the temps reach 110 degrees on the terrace and occasionally higher. One of the floor fans does pull a bit of cool air from our living room, but not enough to make it comfortable for begonias or people after the noon hour.

Despite the adverse conditions, this year I have had more success with my plants than in the past. When I worked, I had to close the blinds on the terrace by 9

At Marie Selby Botanical Garden, B. lanceolata *hangs while at* ***Mary Sizemore's*** *in Deland, Florida a new species from China grows in the ground. And at* ***Maxine Zinman's*** *home, begonias even bloom on the table.*

a.m. and they were not opened until 6 p.m., not the best of light conditions for my collection even though many are under lights. Now, I am able to leave the blinds up until noon or so, whenever the sun dictates. On cloudy or rainy days, I can leave them up all day. A definite improvement, and the increased light has produced happier begonias. However, during the hottest days of summer, growth slows and watering becomes a "do I or don't I" situation, and fertilization comes to a halt.

Fall and winter are most welcomed here. This is the time when most begonias go into a slowed growth or winter dormancy; mine come to life. The southern exposure is a plus this time of the year. No heat is needed and on those nights we endure a freeze, and we do about 20 times during the winter, I have found that the fans move enough air to prevent a disaster. If a leaf or two touch the glass, I of course will lose those. October and November I try to repot, and since I have limited space and want many different varieties, I usually reduce the size of the root balls and repot into the same size pot.

The last week of July and first week of August, I found myself again traveling with **Helene** and **Charles Jaros,** up to Virginia. Our destination was the home of **Maxine Zinman**. **Janet** and **Lou Welsh** drove down from Pennsylvania to join us. Maxine even had us dining on begonias. Her beautiful Crooksville China features a yellow tuberous begonia known as the "Delmar Begonia". The china was placed on a table cloth of Rex leaves ad tuberous blossoms, and other tropicals of lesser importance. We nursery hopped, searched for antiques, viewed each others' slides of begonias and begonia related objects, and exhausted ourselves with wonderful begonia talk. One of the nurseries we visited was **Andre Viette's** which displays vast fields of perennials. What a treat for me to see the perennials we are unable to grow in Florida, but so often read about in books and magazines. Unbeknownst to us the gardens at his home were open for viewing the day we were there. How lucky could we be?

Next on our agenda was Fairfax, Virginia and a few days with **Johanna Zinn.** Yes, Maxine traveled with us; unfortunately Janet and Lou had to return to Pennsylvania. Oh, what species Johanna grows in her vast terrarium collection. Ever window housed a different variety and her basement has fantastic light stands, brimming with treasurers. Her back yard hosts a slope of *grandis* not to be believed. We arrived about two weeks before they were to begin the display of their blossoms. Her potted begonias growing outside for the summer were not only cultivars, but many more species which do not require the additional humidity achieved from terrarium care.

We toured Washington, D. C. two days, the highlight being the newly restored National Botanical Garden Glasshouse. I was overwhelmed with the numbers and size of begonias used in their displays, both species and cultivars. Be sure to put that destination on your list when you are in the area. It is well worth the effort.

Labor Day weekend brought the Southwest Region Get-Together, held in Dallas, Texas. It was a small gathering, actually rather intimate, just the size for a successful study weekend. And study we did, a two day seminar on the workings of the Smithsonian's *Begoniaceae* "Illustrated Key and Annotated Species List" and a two day judging School. The tours were grand and a cutting party at the Forth Worth Botanical Garden was the best ever.

I met **Mary Sizemore** of Deland, Florida in November and was able to tour her greenhouse. She and China ABS member **Tan Jiew Hoe** experienced a most exciting and lucrative collecting expedition to Viet Nam in 2002. They were in the

area where Begonia U388 was collected. Since they found the area so rich with begonias, they are planning a return trip in the spring of 2004. The results of their 2002 efforts have been rooted in her greenhouse and are some of the most exciting finds I've ever seen.

Early December brought an invitation to install the officers of The Begonia Society of the Palm Beaches. This branch now has the second largest membership of all our ABS branches. It was also their Holiday Party, which included a banquet table groaning with a grand array of tempting delicacies. And after dinner, Begonia Bingo; what could be more fun?

There is nothing this "begonia nut" enjoys more than spending time with friends and begonias, and 2003 was a year when I was able to do just that and more. It is a thrill to visit the gardens of treasured friends, learn of the way they grow their plants, share growing experiences and share cuttings of special begonias.

Don't you like it when Mary travels and we get pictures? You may write to Mary at 1560 Lancaster Ter Apt. 1008, Jacksonville, FL 32204

In Memory
Margaret Lee
In Friendly Contact...

This was the way one of ABS's grand dames signed her correspondence and lived her life until the end. **Margaret (Marge) Lee** passed away January 18, 2004. She was born in Maryland on August 29, 1911 and moved to California in the early 50's with husband, **Paul**. They joined the ABS in 1952. They grew beautiful plants and had one of the largest collections of begonias. Paul was the grower and passed away in 1982 but Marge continued her activities. She was interested in the people and organization. She hardly ever missed branch and board meetings, conventions and Southwest Get Togethers.

She was active in all three San Diego Branches and the San Miguel Branch was renamed in her honor in 2000. She was treasurer for the branch from before I joined in 1977 until just a few months before her death. Long-term service was her trademark. Marge entered the ABS board as Judging Co-chair in 1975, taking over the following year. She served as Parliamentarian almost continuously since 1984, First Vice-President in '83 and President in '86 and '87, that's 29 years of CONTINUOUS duty on the ABS's board, a record, of some kind, that won't soon be broken.

Marge and Paul won the Herbert P. Dyckman Award in 1978, the Alfred D. Robinson Medal for *B.* 'Purple Petticoats' in 1968 and **B.** 'Nokomis' in 1984, Marge went on and won the Eva Kenworthy Gray Award in 1994.

That's what she accomplished but what made Marge remarkable was the way she touched everyone's life that she met. She was sought out by all and she was a positive force in our lives, especially mine. Her passing will leave a great hole in us and in the American Begonia Society as a whole.

Michael Ludwig,
San Diego, CA

The 2004 Convention in San Diego will be dedicated to the memory of Margarent Lee.

A molecular evolutionary study of *Begonia*.

by Laura L. Forrest (e-mail: lforrest@siu.edu; Department of Plant Biology, University of Southern Illinois, Carbondale, IL 62901, USA) and Pete M. Hollingsworth (e-mail: p.hollingsworth@rbge.org.uk; Royal Botanic Garden, Edinburgh, 20A Inverleith Row, Edinburgh, EH3 5LR, Scotland)

There are three genera within the family *Begoniaceae*. *Begonia* L. is by far the largest – with around 1400 known species, it's within the ten largest vascular plant genera. Within the genus *Begonia* species are classified, on the basis of morphological similarities, into 63 sections (Doorenbos et al. 1998). *Begonia* has a virtually pan-tropical distribution. *Symbegonia* Warb. has only c. 12 species, and is endemic to New Guinea. It differs from *Begonia* in that the tepals, particularly in its female flowers, are fused into a tube. This is thought to be an adaptation to sunbird pollinators. The third genus in the *Begoniaceae* is *Hillebrandia* Oliver, which has only one species and grows in Hawaii. *Hillebrandia* differs from the other two genera in that its ovary is semi-inferior (as opposed to inferior), and its fruits dehisce between the styles.

The morphologies of different plants can show similarities for a number of reasons, and it can be difficult to untangle which of these characters are 'good' for building phylogenies (i.e. which ones are due to shared descent rather than other factors). Plants which grow in similar habitats, or which are pollinated by similar organisms, can converge on similar morphologies regardless of whether or not they share recent common ancestors (the classic example of this being the stem succulence of Old World Euphorbs and New World cacti). If we use these convergent characters in our analyses, they can drive the programmes towards the wrong solutions. In *Begonia*, for example, there are different groups of plants that have fruits adapted for animal disperal – there are fleshy-fruited plants in the Asian group *Sphenanthera*, the African section *Tetraphila*, and the American section *Trachelocarpus*. Including fruit characters in phylogenetic analyses can cause these species to group together even although their floral morphologies are very different. Molecular sequence data can offer more reliable estimates of phylogenetic relatedness. Sequence data are also faster to produce than morphological data – we can compare more characters for more taxa. In the past, this was balanced by the fact that sequencing was more expensive. However, techniques have improved and costs reduced to the extent that, when salaries are factored in, sequencing is currently by far the less expensive option.

We have gathered molecular sequence data from two adjacent regions of the nuclear genome. The first is the ribosomal internal transcribed spacer (ITS) region and a short gene that interrupts it (5.8S). The other region is part of the ribosomal large subunit (also known as 26S). ITS, although transcribed, is not a functional region, while the 26S region is part of a functional gene and therefore under greater selectional constraint (i.e. in practice, it has a slower rate of evolution than the ITS region has).

We sampled 25 of the 63 currently

recognized sections in *Begonia*, and one species of *Symbegonia*. We also sampled the two species in the genus *Datisca*, which previous studies have shown to be the closest living relative of the *Begoniaceae* (e.g. Soltis et al. 1997, Swensen et al. 1994, Swensen et al. 1998). By including *Datisca* in our analyses, we can use it to polarize the phylogeny (we 'pull' *Datisca* down to the bottom of the phylogenetic tree we produce by designating it as an 'outgroup', and this lets us see which lineages of *Begonia* are more or less derived).

The paper we have recently published in the journal *Plant Systematics and Evolution* (Forrest & Hollingsworth 2003) describes our methods, both in obtaining the DNA sequences and in their analysis. The phylogeny we present here was obtained using an intensely statistical analytical method called maximum likelihood, which selects the phylogeny which best explains the molecular data, according to a specified model of molecular evolution. Using this method we obtained a single most likely tree (the branching diagram in the figure). However, because there are many other possible branching diagrams and it is hard to evaluate which one of them is the most accurate representation of the actual evolution within the group (there may be lots of other possibilities which are very, very nearly as likely) we have calculated a measure of statistical support for the 'branches' (i.e. the relationships) on the tree. The numbers on the branches are posterior probabilities (calculated using a Bayesian inference method). Only branches with values of 95% or greater are statistically significant, and therefore these are the relationships in which we can have the highest confidence.

There are three main clades (groups of organisms wherein all members share a single common ancestor) in *Begonia*. One comprises most of the African species, and includes the Madagascan plants. The next clade is also African, and only includes the species from sections *Rostrobegonia* and *Sexalaria*. The third clade is the largest, including the southern African section *Augustia*, all the Asian and American species we sampled, and the Socotran endemic *B. socotrana*. One of the Asian species included in this clade is *Symbegonia sanguinea*.

Because there is something known as a 'polytomy' between these three clades (their relationship is not resolved dichotomously) we are not able to say anything about which *Begonia* species are more or less derived. However, there is some indication that the lineages in Africa are more ancient than those in Asia and America, and that the non-African *Begonia* evolved from African ancestors. Despite the relatively young ages of their lineages, there are far more species of *Begonia* in Asia (c. 650 species) and American (c. 600 species) than there are in Africa (c. 140 species). Africa as a continent has undergone considerable aridification through geological time, which may have led to extinctions in a mesic group like *Begonia*, thus reducing the number of extant species. The large numbers of species in Asia and America, on the other hand, can be explained as the product of (relatively) recent active diversification.

This phylogeny also produced our first clue that all the *Begonia* species on the island of Madagascar have a single origin – it seems that there was one colonization event from mainland Africa, with a subsequent radiation into all the species (at least 48) that are there today.

In order to test the placement of *Symbegonia* more thoroughly, we conducted another analysis, including only a few *Begonia* species that are related to *Symbegonia* in our larger analysis, and

sampling more accessions of *Symbegonia*. The phylogeny that we obtained from this actually nests the *Symbegonia* species within *Begonia* section *Petermannia*. Both taxa share several morphological characters – their inflorescences are racemes with the female flowers basal and the male flowers distal, they are protogynous (the female flowers are sexually mature before the male flowers are), they have two tepals in the male flower and five in the female flower, the stamens are partially fused at the base, and they have three bifid styles, three-locular ovaries, bifid placentation, and three approximately equal-sized wings on their fruits.

Because *Symbegonia* nests within *Begonia*, we can say that *Begonia* is 'paraphyletic'. This means that it does not contain ALL the descendants of a single common ancestor. There are a number of reasons why this is not desirable. One is that it can lead to spurious comparisons (and therefore to bad science). For example, someone could wonder why there are more species of *Begonia* than of *Symbegonia*, whether it means that *Begonia* possess some special character which make them more likely to speciate. However, if you look at the phylogeny, you can clearly see that this would not be a comparison between two equivalent things but between two nested organisms. Another very practical consideration is that things that are classified separately are not included in the same literature. For example, *Symbegonia*, because it was thought to be separate from *Begonia*, was not included in the vastly useful 'Sections of *Begonia*' book produced by Doorenbos, Sosef and de Wilde (1998). Although there are morphological characters that make it easy for us to recognize members of *Symbegonia*, they are less morphologically distinct from other *Begonia* than, for example, species from the American section *Trachelocarpus*, or the African section *Tetraphila*, or the Socotran section *Peltaugustia*, are.

We have chosen to resolve the problem of *Begonia*'s paraphyly by 'sinking' *Symbegonia*. It has become a section in *Begonia*. This has led to some necessary name changes, because some of the species names that were used in *Symbegonia* already exist in *Begonia*. For example, we could not rename *Symbegonia sanguinea* '*Begonia sanguinea*' because *Begonia sanginea* already exists – it is a Brazilian plant which was described by Raddi in 1820. Therefore, we have made three new combinations, and seven new names, and these are reproduced here from the original publication (Forrest & Hollingsworth 2003):

Section **Symbegonia** (Warb.) L. L. Forrest & P. M. Hollingsworth, stat. nov. *Symbegonia* Warb. in Engler & Prantl, Nat. Pflanzenfam. 3(6A): 149, pl. 52, 1894, emend. Irmsch., Bot. Jahrb. Syst. 50: 381-383, 1913. Type: *S. fulvo-villosa* (Warb.) Warb. in Engler & Prantl, Nat. Pflanzenfam. 3(6A): 149, pl. 52, 1894.

Begonia arfakensis (Gibbs) L. L. Forrest & P. M. Hollingsworth, comb. nov. *Symbegonia arfakensis* Gibbs, Fl. Arfak Mts. 149, 1917.

Begonia symbeccarii L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. beccarii* Warb.) *Symbegonia beccarii* Irmscher, Webbia 9: 507, 1953.

Begonia symbracteosa L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. bracteosa* A. DC.) *Symbegonia bracteosa* Warburg in Schumman & Lauterbach, Nachtr. Deutsch. Schutzgeb. Sudsee 323, 1905.

Begonia fulvo-villosa Warb., Bot. Jahrb. Syst. 13: 386, 1891, syn. *Symbegonia*

fulvo-villosa (Warb.) Warb. in Engler & Prantl, Nat. Pflanzenfam. 3(6A): 149, pl. 52, 1894.

Begonia symgeraniifolia L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. geraniifolia* Hook.) *Symbegonia geraniifolia* Ridley, Trans. Linn. Soc. London, Bot., II 9: 61, 1916.

Begonia symhirta L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. hirta* (Klotzsch) L.B. Smith & B.G. Schub.) *Symbegonia hirta* Ridley, Trans. Linn. Soc. London, Bot., II 9: 61, 1916.

Begonia mooreana (Irmsch.) L. L. Forrest & P. M. Hollingsworth, comb. nov. *Symbegonia mooreana* Irmsch., Bot. Jahbr. Syst. 50: 381-383, pl. 5, 1913.

Begonia sympapuana L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. papuana* Warb.) *Symbegonia papuana* Merril & Perry, J. Arnold Arbor. 24: 59, pl. 7f-j, 1943.

Begonia symparvifolia L. L. Forrest & P. M. Hollingsworth, nom. nov. (non *B. parvifolia* Klotzsch.) *Symbegonia parvifolia* Gibbs, Fl. Arfak Mts., 150, 1917.

Begonia pulchera (Ridley) L. L. Forrest & P. M. Hollingsworth, comb. nov. *Symbegonia pulchera* Ridley, Trans. Linn. Soc. London, Bot., II 9: 62, 1916.

Begonia symsanguinea L. L. Forrest & P.M. Hollingsworth, nom. nov. (non *B. sanguinea* Raddi) *Symbegonia sanguinea* Warb. in Shumann & Lauterbach, Nachtr. Deutsch. Schutzgeb. Sudsee, 323, 1905.

Begonia strigosa (Warb.) L. L. Forrest & P. M. Hollingsworth, comb. nov. *Symbegonia strigosa* Warb. in Shumann & Lauterbach, Nachtr. Deutsch. Schutzgeb. Sudsee, 324, 1905.

Acknowledgements. The M. L. MacIntyre *Begonia* Research Trust provided the majority of funding for the first author's PhD, of which this study represents a portion. Molecular studies were also supported by a NERC Glasgow Taxonomy Initiative grant. We are very grateful to the horticulture staff at Glasgow Botanic Garden and the Royal Botanic Garden, Edinburgh for maintenance of the *Begonia* living collections that were used in this study.

References

Doorenbos, J., Sosef, M. S. M., de Wilde, J. J. F. E. (1998) *The sections of Begonia*, including descriptions, keys and species lists (Studies in Begoniaceae VI). Wageningen Agricultural University Papers 98-2: 1-266.

Forrest, L. L., Hollingsworth, P.M. 2003. A recircumscription of *Begonia* based on nuclear ribosomal sequences. *Plant Systematics and Evolution* 241: 193-211.

Soltis, D. E., Hibsch-Jetter, C., Solis, P. S., Chase, M. W., Farris, J. S. (1997) Molecular phylogenetic relationships among angiosperms: an overview based on *rbcL* and 18S rDNA sequences. In: Kwatsuki, K., Raven, P. H. (eds.), *Evolution and diversification of land plants*. Springer-Verlag, Tokyo, pp. 157-178.

Swensen, S. M., Luthi, J. N., Rieseberg, L. H. (1998) Datiscaceae revisited: monophyly and the sequence of breeding system evolution. *Systematic Botany* 23: 157-169.

Swensen, S. M., Mullin, B. C., Chase, M. W. (1994) Phylogenetic affinities of Datiscaceae based on an analysis of nucleotide sequences from the plastid *rbcL* gene. *Systematic Botany* 19: 157-168.

Figure 1: Likelihood analysis of combined ITS and 26S data. Numbers below the line, or to the right of nodes are posterior possibiilities. Branches with posterior

probabilities of 95% or over are presented in bold. Sectional placements from Doorenbos et al. (1998) are given in parentheses.

Key: AF = Africa, MAD = Madagascar and the Mascarines, SOC = Socotra, AM = America, AS = Asia.

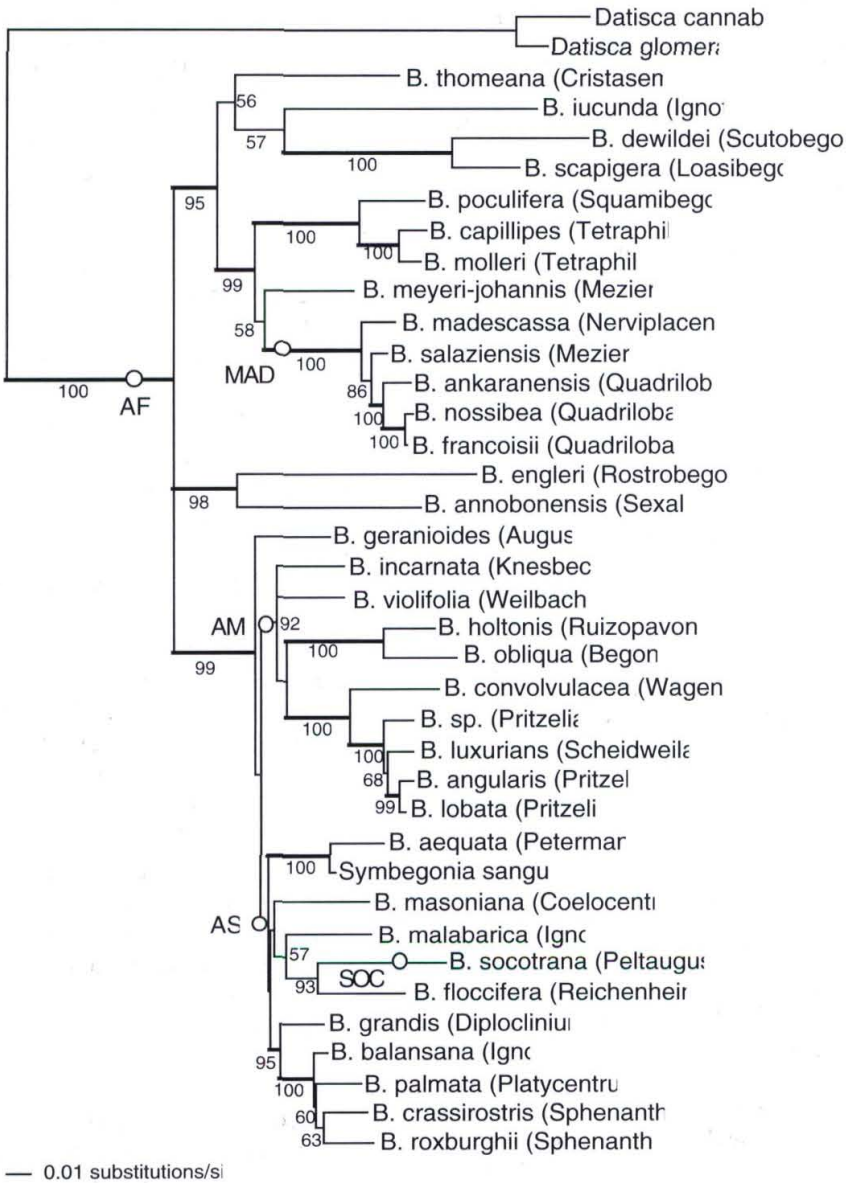
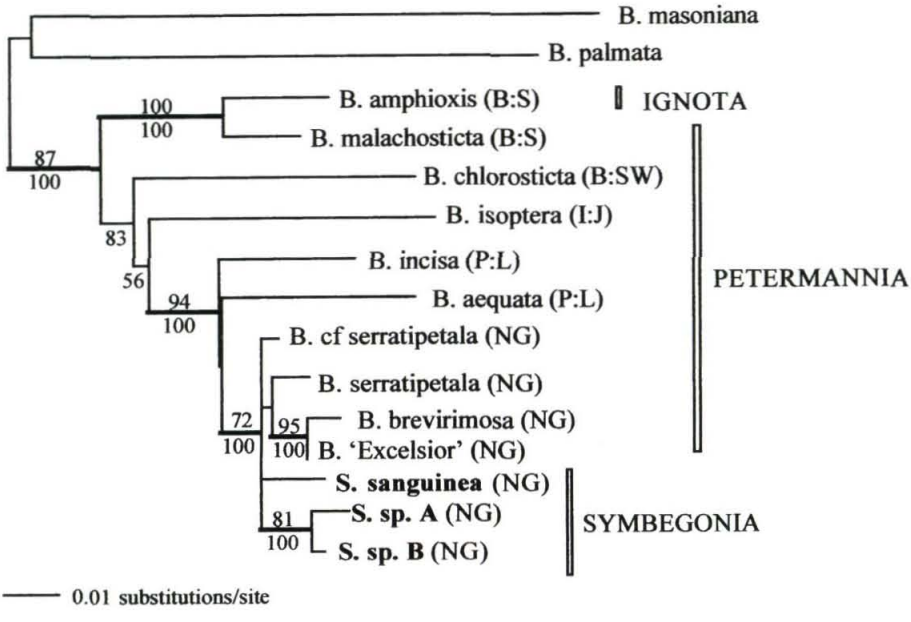


Figure 2. Likelihood analysis of ITS data. Numbers above the lines are Bootstrap support. Numbers below the lines are posterior probabilities. Branches with Bootstrap support above 70% and posterior probabilities of 100% are in bold.

KEY: B:S = Borneo, Sabah; B:SW = Borneo, Sarawak; P:L = Philippines, Luzon; I:J = Indonesia, Java; NG = New Guinea.



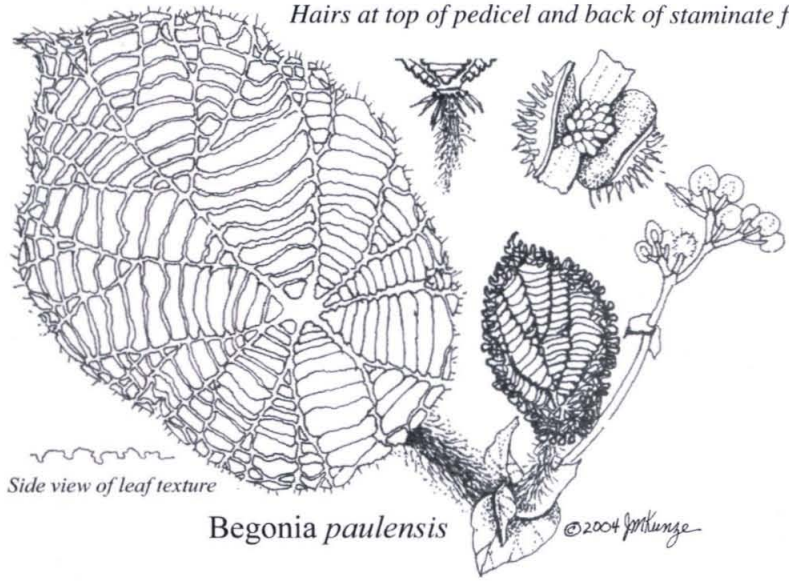
Continued from page 85.

Please note my deadlines for next issue shown on page 118. I cannot tell you how much it helps me when I have everything on time.

Thanks to **Johanna Zinn** for sending us quick tips for this issue! Those really helped fill the little spaces. Don't you have one you can send? I'd also still like to hear about your useful finds at garage sales, flea markets, etc. that you've converted to use in begonia growing. Did I tell you that I found a box of giant curler pins that are perfect to pin rhizomes or new cuttings in place!

Save our Species

The last issue of the *Save Our Species Newsletter* is out and it is full of interesting articles to be found nowhere else! Remember, you too can be on the mailing list by adopting a species. Just write to **Rehka Morris**, 318 Woodland Circle, Pendleton, SC 19670-9433 or email her at shivavana@juno.com. You may pick the species you want. Just think the power we could have in conservation if each ABS member took just one species to look out for!



Begonia paulensis

By Normand Dufresne

Begonia *paulensis* was discovered in St. Hilaire Province of Sao Paulo Brazil. The original citation was published by Alphonse de Candole in 1859.

B. *paulensis* is classified as: Rhizomatous, Distinctive Foliage, Unusual Surface and/or Unusual Coloring and Large Leafed. The peltate leaves, which at maturity can be 18 to 20 inches in length and 12 to 15 inches wide are medium green in color with short white hairs on the upper surface. The underside has red hairs along the veins. There is a small single row collar of red hairs at the petiole junction. The petiole and rhizome are covered with white hairs. The main veins radiate from the petiole connection, and are joined by cross veins, which form circular lines giving a spider web effect. The large leaves are brittle and crack easily.

The 1 1/2 by 2 inch creamy white flowers with maroon hairs on the outside are held high above the foliage on a panicle, which is a compound, loosely branched flower cluster, longer than it is broad. The male flower has two sepals and two petals; the sepals are larger. The female flower has five divisions. The difference between sepal and petals cannot be distinguished.

B. *paulensis* can take a wide range of temperatures but growth will slow at lower temperatures. B. *paulensis* does not require the extra humidity that so many begonias in the Distinctive Foliage Classification demand. If the leaf edges curl and turn brown then the humidity is probably too low.

Watering must be done with care, as the leaves spot easily and over-watering will cause rot. Propagation by leaf or wedges does not work, but a rhizome with a couple of small leaves is quite easy to start. Bloom time is said to be late winter through spring, so I hope to be growing it from seed in a few more months.

B. *paulensis* prefers low light or the leaves will get pale. Since my leaves are pale I will try **Millie Thompson's** trick of fertilizing once a month with Knox Gelatin. [The box of unflavored Knox Gelatin was passed around the room - it is nearly pure nitrogen, and apparently readily taken up by plants, as this use was noted on the packaging.]

Special thanks to Jeanne Marie Kunze for her lovely drawing!

This article first appeared in The Buxontonian, *newsletter of the Buxton Branch. We thank Normand, their editor* ***Jane Snellman****, and Jeanne Marie Kunze for letting us reproduce it here.*

Correspondence to Clayton M. Kelly by Morris Mueller

It was my privilege to stumble upon a file of correspondence to Clayton M. Kelly while going through the historical materials of ABS. There were also a few handwritten notes by Kelly himself from conversations he had with **Alfred Robinson** and notes from presentations (The handwriting in pencil is difficult to read, I found.) he attached. The correspondence had some personal information, but for the most part was about horticulture, plant history, or scientific topics. Letters from 1933 to 1939 are in this file.

My purpose for writing this piece is to share only a very small bit of what was found and also to encourage each branch to collect their own history. I also urge each branch to send a copy of their newsletter to our historian, **Jeanne Jones** (address on inside back cover).

Now on to some of the interesting material found, in no particular order.

In 1938 Mr. Kelly arranged for the translation of *Die Begonien* by **K. A. Fotsch** from the German by U.C., Berkley's W.P.A. project. There are more than 75 letters from a **Dr. Purpus** and **Dr. Goodspeed** (both affiliated with U.C., Berkley) regarding exploration for begonias in Mexico. (Despite having been a teacher, I found the letter from Dr. Purpus to be unreadable.)

A large portion of the correspondence is from Alfred D. Robinson from 1933-39. Topics covered are: personal; business at Rosecroft Gardens; tuberous begonias; communications from many including **B. Buxton** and **C. Bower**; visits from friends; buying trips to the L.A. area; seed sowing and growing; and weather conditions. Regarding seed Robinson wrote in a letter dated June 3, 1937, "Save seed from late in a plant's blooming cycle as it has better germination."

There are a dozen or more letters from the N.Y. Botanical Garden. Cuttings were traded by the Garden and Mr. Kelly, and the Garden requested herbarium specimens.

The file contains many letters from **Rudy Ziesenhenne** beginning in 1935. Topics included: the sharing of cuttings

Continued on page 107.

SEMINARS, CONVENTION 2004

Back to the Future, Species, Seed & Beyond

by Seminars Chairman Thelma O'Reilly and CoChairman Janet Brown

The seminars reflect the theme of this years convention covering the past, the present and the future of the world of begonias.

"Quail Gardens-Nature's Paradise" Julian Duval: Julian Duval has been Director of Quail Botanic Gardens since 1995. His seminar will precede the Quail tour the following day and you will be introduced to the diversity and beauty of the gardens before your visit. Julian Duval has created a 15 year master plan for the gardens that is well on the way to completion. "Quail Botanic Gardens is dedicated to the conservation of rare and endangered plants from across the globe." Thelma O'Reilly.

"Begonias: The Intriguing Thick Stems" Freda Holley : Editor of the *Begonian* and an expert at growing, classifying and hybridizing thick stemmed begonias as well as many others Freda will introduce us to these sometimes awkward, sometimes extremely beautiful, but always intriguing plants. Her program will present thick stemmed begonias objectively and subjectively drawing on her long experience with the group. And at the end of the talk you will love them too.

"Alluring Begonia Species World-Wide" Charles Jaros Past American Begonia Society President, Senior Judge, Twice Convention Chairman Charles Jaros is one of the begonia growers and collectors in the world. When a rare or new species is discovered it is a good bet to send it to Charles to propagate and nurture. He will speak about the great collectors who have worked all over the globe for over 100 years to bring us new species that enlighten and enrich the quest for begonia knowledge.

"Begonia Species - Past, Present and Future" Hugh McLauchlan: Many times President of the the Scottish Begonia Society Hugh McLauchlan will speak about the long history of the Glasgow Botanic Gardens in collecting and cataloguing species from all over the world. Hugh is a ribbon winner many times over for his tuberous begonias and spends time at the Glasgow gardens working with the MacIntyre collection and new arrivals from over the world including the symbegonias. He is a knowledgeable and entertaining speaker.

"Mexico - Begonia Treasure Chest" Rekha Morris Save Our Species Chairman Rekha Morris has made several productive trips to Mexico sponsored by the American Begonia Society to document species and to hunt new ones. Her very interesting reports have appeared in recent Begonians. Rekha and her husband Michael are intrepid collectors and expert catalogers of begonia species. She will report on the Mexican begonia species, a most interesting group.

"Captivating Cultivars" Brad Thompson: Past Editor of the *Begonian* and now professional hybridizer and grower Brad Thompson has a vast knowledge of the art and science of hybridizing. He will lecture on old and new cultivars, why some have persisted and some have not and

what lies ahead in the future. Brad has created an incredible number of new cultivars in the relatively short time he has been active and has drawn from the past while creating our begonia future.

"Gireoudia - A Different Perspective" Prof. Kathleen Burt-Utley: Kathleen Burt-Utley is a Professor of Biological Sciences, University of New Orleans, LA. She will speak on the Gireoudia Section of begonias found in Central America and Mexico. The Gireoudia contain some of our most interesting and beloved species, i.e., *B. crassicaulis, heracleifolia, carolineifolia, sericoneura, vitifolia.* Prof. Burt-Utley is one of our foremost begonia researchers.

In addition **Chuck Ades** will give a brief seminar at Ades & Gish for the tour group.

Let's learn together in San Diego!

IN THE MAILBOX

by Greg Sytch

Lately, I have received many questions regarding tuberous begonias. Some wanted to know how to plant them, others wanted to know what to expect from the bulbs, what to feed or how much to water. Since I live in Florida and tuberous do not grow here, I usually forward my requests to someone more learned and experienced then me. However, most of the questions were rather basic and this helpful information should give even the most amateur gardener confidence.

SOIL: As with most begonias, it must be well-drained. Tuberous prefer it a little heavier if you are growing in baskets, because baskets dry out more rapidly. A basic light potting mix with perlite and pine bark would work well.

MOISTURE: Tuberous prefer a soil that stays moist but dries out between waterings - just like most begonias do. However, kept too dry for too long and

the bulbs can suffer. Too wet can spell death in high temperatures.

LIGHT: Shady conditions with diffused sunlight is ideal. Hot, afternoon sun can be deadly. Keep them bright but not in full sun. Baskets require more shade unless you can water them more frequuently.

FERTILIZER: When potting, add a generous pinch of bone meal and mix it in the soil. This aids blooming as the bone meal breaks down. Otherwise, use time-release or liquid fertilizer such as 18-24-16 OR 15-30-15 according to label directions. The higher middle number assists with good blooming.

DORMANCY: Tuberous begin dormancy in the fall. Allow the soil to dry out almost completely and the leaves to die back. Once this occurs, store the pot dry and cool (but not frozen) or lift the bulb and store in dry peat moss, again in a cool place. Most areas can begin starting tubers around the first day of spring for an early start. Any earlier, and you must provide bright light so growth remains compact and not leggy.

FLOWERING: It can be helpful to occasionally pinch a few bloom heads off. This helps the buds on the plant become a little larger and fuller, if desired.

DISEASE: Spray monthly with a light, half-stregth all-purpose fungicide to prevent mildew in spring or other diseases in summer. Keep dead leaves and debris removed.

That pretty much covers the basics of tuberous begonias. If you have any questions, remember to email me at gsytch@cs.com, snail mail me at : 6329 Alaska Ave, New Port Richey FL 34653 or call 727-841-9618. Have a great summer season! Greg Sytch, Tampa Bay, FL, Horticultural Correspondent

PS- check out the GardenWeb! There is a forum just for Begoniacs and it may prove helpful to everyone.

In Memory
Joy Logee Martin

In the digital age, one measure of a life is the number of times your name will appear in a Google Search. For those of you who don't spend time on the Internet, Google is a search engine that peers into all of the nooks, crannies and web pages of the Internet to find what you are looking for. By that measure, Joy Logee Martin had a full and rewarding life. But in remembering Joy Logee Martin in terms of the horticultural world, she was even more of a giant.

She was a nationally recognized expert among herb growers, geranium growers saw her as a very knowledgeable grower and a source of rare plants, and, of course, the American Begonia Society viewed Joy and the Logee Greenhouses she so ably managed for a number of years as a national treasure and a source of hundreds of species and hybrid begonias.

As a person, Joy was a prototypical Connecticut Yankee woman. She spoke with a distinct and enjoyable New England accent and had an endearing mix of charm and practicality. She made a visit to her greenhouses a wonderful and rewarding experience, and if you were lucky or a favored friend, she would take you to the back greenhouses where the stock plants were grown away from public and where hybridizing was taking place. Logees hybridized many begonias but released only a few because a new introduction had to pass the test of time and Joy's highly critical eye. Among their hybrids are *B.* "Charm" , B. 'Midnight Sun' and B. "Pinafore"

For many years, one of the most

popular events sponsored by our branch has been a trip to Logees to look and admire the vast variety of plants collected and grown there for more than a century and to get some time to listen to Joy sharing her knowledge and love of begonias. We and the horticultural world have lost a good friend. We will miss her.

Howard Berg

Begonia Society of the Palm Beaches Celebrates its 25th Anniversary

We've come a long way and had a wonderful time in twenty-five years. The Begonia Society of the Palm Beaches celebrated its 25th anniversary at its annual auction on February 9th. Founded on January 22, 1979, the BSPB started with 30 members. To our delight and great fortune, four of the original members are still active and in good standing as members of BSPB!

Frances Hunter, who was our very first president, tells us there were very few plant societies in West Palm Beach in 1979. She had been an active member of a number of plants societies in both Atlanta and Miami, and was distressed to find almost nothing organized in the Palm Beaches. Traveling to Miami to go to a meeting 'took hours without I95 or the Turnpike'. So when Frances ran into her old Miami friend **Paul Lowe** and he said in exasperation 'Frances, we've simply GOT to do something in this town,' they put their heads together and the Begonia Society of the Palm Beaches was born. Frances was the first president and remains active; she is now Parliamentarian.

Other original members were Frances' sister **Rosemond Meriwether, Helene Jaros**, and **Charles Jaros.** They attended the initial meetings of BSPB, traveling together from Coral Gables. That is devotion! Rosemond also was active in the African Violet and Orchid Societies for a while, and took the Begonia judging courses. But her real interest is in propagation—"watching the babies grow." We are happy to report she is now back in West Palm, faithfully helping at flower shows and society meetings. Charles and his mother, Helene, have made tremendous contributions to both ABS and BSPB. In addition to being Past President of ABS, Charles grows the most stunning begonias, wins the most blue ribbons, gives the most informative talks, runs the best auctions and the most fun Begonia Bingo. Helene was given the Eva Kenworthy Gray award by ABS in 2002. This award is given for one of two reasons: 1. Contributing something of a spiritual value toward cementing goodwill and harmony among members, and 2. Contributing original material toward helping the rank and file members further their study of begonias. She also contributes to ABS by making dolls to raffle at ABS conventions.

The society these plucky people founded has evolved and prospered too. In addition to excellent monthly programs, we have grown and hybridized and shown innumerable begonias, held flower shows, and sponsored ABS conventions and board

meetings. We maintain a begonia garden at Mounts Botanical Garden, and have made and cemented many friendships. Our plants are great; our people are the best.

We've grown to 85 members, now the second largest chapter in ABS. We hope to continue to prosper and gratefully thank these four wonderful people for their contributions.

Nancy Cohen

Continued from page 101.

and seed; seed germination and growth; correspondence with others from around the world Rudy had received; and weather conditions. In a letter to the board dated October 20, 1938 Rudy wrote, "The study of begonias I hope to make my full time life work." (Congratulations, Rudy, you did it!)

The correspondence from **Bessie Buxton** also began in 1935. Topics included: contacts with the Arnold Arboretum and the N.Y. Botanical Garden; seed sowing and growing; round robin involvement; her duties as secretary of the National Council of State Garden Clubs; and of course weather conditions.

There is a lot of miscellaneous correspondence to obtain seed, cuttings, and starts from various parts of the world, particularly the New World. Mr. Kelly kept copies of much of what he sent out as well. Among this group of letters are some from **Ernest K. Logee** between 1936 and 1938.

A final note, in two separate files were two sets of the original *Begonia Bulletins*, the predecessor of the *Begonian*. According to a note on one of the files it belonged to **Herbert Dyckman**.

I hope you have found these tidbits of interest. Perhaps some talented member will do a more thorough job of sharing this most interesting, informative correspondence. Alternatively maybe the majority of it can be reproduced for any member interested.

Morris Mueller is Past President of ABS and you will find his address on the inside back cover.

Quick Tip

In the spring, *B. grandis ssp. evansiana* comes up much later than any of my other perennials. I now interplant my grandis bulbs with old fashioned bleeding heart plants. The bleeding hearts provide spring bloooms, and, as the bleeding hearts die back, the grandis fills in the bed.

Johanna Zinn,
Fairfax, VA

CLAYTON M. KELLY SEED FUND LISTING
The Margaret Lee Branch, San Diego County, CA
Michael Ludwig, Administrator

The seed fund is a service to members only. It is a privilege of your membership.

DISCLAIMER: The seeds distributed by the seed fund are identified as received from the donors. The seed fund cannot guarantee that the identification is correct. The species names (in italics) reported here are correct based on the latest information from **BEGONIACEAE,** Ed. 2; Golding, and Wasshausen. The descriptions published are from the literature and apply to the name submitted for the offerings.

The Seed Fund needs donations of seeds. Seeds may be traded for listed seeds. Seeds may be ordered from the master list by name. If you have a special need ask the Seed Fund Administrator. Please pollinate your species begonias with pollen from other plants of the same species and contribute (or exchange) to the seed fund.

Most packets of species seeds are $1.50 all packets of cultivars (including open pollinated) seeds are 50¢ per packet. Very rare seeds and newly collected seeds will be $2.00 or more per packet. California residents please add 7.75 % sales tax. All orders must be accompanied by check or money order, **payable in US funds ONLY**, to **The Clayton M. Kelly Seed Fund.**

Costs of mailing:
US only: 1-12 packets $1; 13-24, $1.35; 25-36, $1.71; 37-48 (2 cans), $2.30; 49-60, $2.66.
Canada only: 1-12 packets, $1.10; **13-24**, $1.46; **25-36**, $1.82; **37-48** (2 cans) $2.35; **49-60**, $2.71.
Mexico only: 1-12 packets, $1.15; **13-24**, $1.51; **25-36**, $1.87; **37-48** (2 cans), $2.50; **49-60**, $2.81.
All other international mail: 1-12 packets, $1.85; **13-24**, $2.68; **25-36**, $3.68; **37-48**, $4.68; **49-60**, $5.68.
Please send your order with payment to:

AMERICAN BEGONIA SOCIETY
CLAYTON M. KELLY SEED FUND
Michael Ludwig
6040 Upland St.
San Diego, CA 92114-1933

The CLAYTON M. KELLY SEED FUND is a project of the Margaret Lee Branch of the ABS in San Diego County, California..

The seed fund has no new seeds to offer this month. Orders from the Master List for 2004 will be processed as usual. The seed fund team has been engrossed in preparations for the 2004 convention here in San Diego next August. If new seeds are received they will be offered next issue.

***Come on everyone; set and save those seed for the seed fund! A month without new seed is a hole in the* Begonian!**

ROMANCING THE BEGONIA

by *Rekha Morris*

Early on the morning of October 9th, 2003, as we drove north from Pachuca on highway 105, the low hills on the eastern side of the road were still partly shrouded in mist. Behind them, the glow of the rising sun created an aureole in shades of primrose and vermilion. This soft morning radiance suffused the undulating valleys below where the dark silhouettes of trees stood out against the lighter shades of green meadows dotted here and there with sheep. This lyrically pastoral scene was reminiscent more of the meadows of northern Europe than the tropical setting we were driving through on our way to rain forest areas of the eastern Sierra Madre in Mexico in search of begonias. As my eyes shifted away from this distant view and closer to the road, there was little doubt regarding the identity of our locale as bananas, papayas, patches of corn and sugarcane, tethered burros beside makeshift stalls, and isolated tin roofed houses whose dusky skinned inmates were beginning to stir outdoors were all indubitably Mexican in character. And to my surprise, this winding subsidiary road through the hills, which we had never been on before, was in far better condition than many of the major highways we had taken in our recent trips to Mexico.

The gradual shift from sugarcane and corn along the hillside to cliffs covered with ferns and other vegetation alerted me to our approach into begonia landscape. According to the notes I had made in preparation for this trip, *B. incarnata* would be the first begonia we would encounter around Molango, 85 km south of Heujutla, and further north about 25 km south of Heujutla *B. karwinskyana* had been recorded by **Prof. Burt-Utley** in one of her articles [*Brittonia*, vol. 42, Jan./March 1990, 38-46].

Although I did not expect to find *B. karwinskyana* so far south, I hoped that I would find other begonias in this increasingly moist habitat, and carefully scanned the cliffs as we drove by. Exploration around two small waterfalls had been disappointing, but as we approached a third° waterfall I realized that there was foliage resembling that of begonias on a jutting rock, which was all but obscured from view by overhanging branches of a small tree. At the base of this waterfall was a large pebbled area forming a shallow pool with larger algae covered rocks jutting out of the water. Using these jutting rocks as stepping stones, I gingerly made my way across to get a closer look, and was delighted to see that here, some 100 km south of Heujutla, was *B. karwinskyana.* I had seen a few plants of this species south of Tamazunchale on highway 85 during our April 2003 trip, however, due to a drought, these had been in poor condition. This plant, although not large, had light apple green leaves undamaged either by weather or by insects and snails. As I stepped to one side to photograph this plant, there among the thick growth of coarse shrubs I saw two other clumps of *B. karwinskyana,* and both were large and shrub-like, some 3' high and as wide.

Apart from these three plants of *B. karwinskyana*, I found none others as I explored about a hundred feet up and down on either side of this waterfall. About 40 km further on I saw more *B. karwinskyana*, although a few of the plants were all but smothered in a landslide. Luckily, several of these had large clusters of flowers which had begun to set seeds, which I managed to free from the debris under which they were partially buried. With some effort

Left above, B. karwinskyana *on Hwy. 105, October 9, '03. Right above,* B. fusca, *Hw. 105, Hidalgo, October 16, '03. Below,* B. multistaminea, *Misantla-Yecantla Road, Veracruz, Inset shows leaf detail, Oct. 12, '03.*

Michael, my husband, was able to reach up with my walking stick and pull down a few other floral clusters with seed pods so that I would have a fair amount of seeds of *B. karwinskyana* for the ABS, as the plants I encountered in April 2003 either had no flowers or were just beginning to send up floral stems.

Within 30 feet of this group of B. *karwinskyana* I also found *B. incarnata* growing in small, scattered colonies along a ten feet stretch of the hillside. Unlike many other groups of *B.incarnata* plants with pink flowers against dark green, lanceolate foliage which I had documented in the past, these had deep crimson flowers and seed pods and foliage which on the reverse was flushed burgundy. Adding to this vivid display were gesneriads with flowers which were orange-gold in bud and brilliant red when they opened. Among the many shades of green which dominated the rest of the hillside, this was a sensational combination of *B. incarnata* and gesneriads.

As I walked up and down, crouched or leaned against the hillside to photograph and to collect seeds of *B. incarnata*, I all but missed a couple of plants which I later decided were possibly those of *B. gracilis*. Rather than drooping downwards like the floral stalks of *B. incarnata*, the clear pink flowers of this species grew at a 90 degree angle along the axils of a red stem.

Some 20 miles from this second site and still nearly 45 miles south of Heujutla, we came across a third and last group of *B. karwinskyana*, a few pink flowered *B. incarnata*, and a third begonia species which is probably *B. pudica*. After this for about 10 km we saw *B. nelumbifolia* in various stages of incipient growth but not a single plant of *B. karwinskyana* where I expected to see it, within 25 km south of Heujutla. All we saw in this section were hillsides which had been brought under cultivation with stretches of orange groves intermixed with plantings of corn. With dusk accompanied by heavy fog fast enveloping sections of the surrounding hills, we headed south for Pachuca, and then on to Puebla arriving at our hotel there around 4.30 A.M. of the 10th !

The area I had planned to explore next would take us first through miles of flat, cultivated land along highway 140 to Perote, and then north on 131 to Tlapacoyan. According to notes I had made researching begonias at the herbarium of The Field Museum of Natural History in Chicago earlier this summer, the area between Altotonga and Tlapacoyan promised to be rich in begonias. I hoped most of all to find *B. multistaminea* and *B. fusca*, neither of which I had seen to date, as well as B. nelumbifolia, *B.* incarnata, *B. ludicra* and *B. heracleifolia*, the latter fast becoming my favorite begonia.

I had been looking forward to finding *B. multistaminea* some 10 or so km north of Altotonga, however, we never made it that far. As we headed north from Altotonga we saw signs warning us that the road was closed due to the collapse of a bridge over a river further up. We decided to disregard this and drive as far up the road as we could, and I secretly hoped that the sign was obsolete. About 8 km north of Altotonga I stopped to photograph and collect seeds of *B. incarnata* with pink flowers. Among these was one remarkable small *B. incarnata* with the most vivid purple-burgundy reverse foliage and red flowers. We had hardly driven a km from this site and were quite possibly within another km of B. multistaminea when we found our way blocked by ropes stretched across the road which ended in a morass of mud.

This article will be continued next issue.

Begonia 'Shaun Henthorne'

New Cultivars
Official International Registration 987
Gene Salisbury, Nomenclature Director

Applications to Register *Begonia* cultivars may be obtained from Gene Salisbury, P.O. Box 52, Tonkawa, OK 74653. Forms must be typed or printed in ink and accompanied by a $2 check payable to the American Begonia Society. Clear photos for publication in the *Begonian*, drawings and dried specimens are requested. ABS is the International Registration Authority for *Begonia* cultivar names. In the listing of the cultivar parents below, the female (seed) parent is given first.

Begonia 'Shaun Henthorne'
No. 987 Begonia (B. Rex cultivar [unnamed] x Rex cultivar [unnamed]) **'Shaun Henthorne'**

This Rex hybrid, photo opposite page, is erect and has leaves that are light green with a burgundy edge and variable large white spots. The leaves are spiral-ovate with a double spiral base. Leaves are 5 to 7" wide and 5 to 12" long. The margin is serrated and are coriacious, chatoyant , hairy with 10 main veins. Petioles are red and 8" long, villose. Stipules are 1 ft. in length, 1/4" wide and red. The leaves have red hirsute, chatoyan hairst.

Flowers have white/pink tepals and a pink and green/white ovary. Tepals are broadly ovate. Male flower is 2" x 1.5" and the female flower is 2" x 1.5 '. The male has 4 tepals, the female 5. Flower clusters have 7 male and 3 female flowers. Clusters tend to be solitary on a 6.5" peduncle in the winter. The flowers have red hairs on the underside with an alternating white and pink blush.

This begonia requires high humidity of 80 to 90% and has a wide variety of leaf size and shape along with differences in leaf coloration. Leaf stem is villose with underside leaf veins hirsute and upper surface of leaves sprinkled wih red hirsute hairs across the entire leaf surface.

This plant was first developed in 2001 by **Michael Kartuz**, 1408 Sunset Dr., Vista, CA 92083-6531. and first distributed in 2002. It has been tested by **Charles Henthorne**, 224 East 14th, Wewoka, OK 74884, **Janet Brown**, 7825 Kentwood Ave., Los Angeles, CA 90645, and **Gene Salisbury**, 515 S. 7th, Tonkawa, OK 74653. It is presented and recommended for registration by Charles Henthorne. It is available for dstribution from Michael Kartuz,, address above. It was registered on January 14, 2004

Quick Tip

For years, I have used disposable plastic bowls from party stores as terrariums for those plants too big for the available glass terrariums. They have rolled edges that I taped together with scotch tape. Opening the terrarium involved scraping or peeling the tape off the terrarium. I now use child size hair clips called "claws" to hold them together. They hold the lids tighter together and quickly open to access the terrarium.

Johanna Zinn
Fairfax, VA

Winter view of Bill's shade house on the outside above. The trees are bare,the weather is cold, but every plant is safely tucked away awaiting spring. Below, the interior: hanging baskets on steel rods, plastic sheeting on walls.

Conservation Comments
by Bill Claybaugh
Conservation Chairman, ABS

On Shade Houses and Rex Cultivars

I recently wrote an article for the *SOS Newsletter* on outside gardening in the Houston area. In reading it later, I realized that a parallel story would be about growing begonia in a shade house in south Texas. A shade house is an extremely flexible installation, capable of supplying a variety of growing conditions, so should have application to many geographic areas.

First, let me briefly describe the shade house that I built in my backyard in a three-month period in the fall of 2001. The main room is 32 x 20 feet is size with 8-foot walls, peaking to 12 feet at the center. Attached is a 12 x 12 foot room for lawn equipment and supply storage. The outside walls have two feet of foundation blocks (cement) followed by a wooden structure (treated lumber) and plastic latticework. The shade house roof has about 50 percent shade from 1 x 4 inch boards forming the roof structure. Over this are corrugated PVC sheets. Inside there are numerous sheets of plastic lattice material that can increase the shade to 80 percent in selected areas, at my choice. The shade house interior is completely open except for three 4 x 4 inch posts, which support the roof. The floor starts with heavy polyethylene sheeting directly on the native soil, followed by two inches of sand, and topped off with 12 x 12 x 1 1/2 inch cement blocks or limestone gravel. The floor cement blocks are separated with small treated wood pieces (for accurate spacing) and sand for porosity. Electricity and water outlets are strategically located around the center and exterior of the shade house for my convenience.

Inside the shade house, I have three large tables 12 x 6 feet in size. One is three feet in height and the other two have four-foot high centers and three-foot high edges. Each of these large tables occupies one-forth of the shade house and is covered with 6-mil polyethylene, then "indoor-outdoor" carpet. The overhead water system comes on once or twice a day, everyday in summer and a once a day every third or forth day in winter. This system keeps the matting constantly wet, so the plants are always surrounded by high humidity. The final forth of the shade house is my "propagation" space where I have workbenches, a computer, and 20+ large plastic terrariums for cuttings, seedlings, and some of the more sensitive plants. Steel pipe is hung throughout the shade house to hold hanging baskets. When cut back for winter, I can handle slightly over 100 hanging baskets of 10-inch diameter, mostly cane-like and trailing/scandent begonia. At last count I had approximately 300 pots of 4 to 8 inch diameter placed on the tables. The plants are spaced such that the plants don't touch. Outside, on the east and north sides of the shade house are additional metal bars for 50+ hanging baskets at full growth and shelving for about 50 large (8 to 12 inch) pots. Overall, there is space for about 500 large potted plants and more

than 600 smaller pots.

Now to the actual use of the facility. One of the best examples involves growing the Rex cultivars. The Rex plants are difficult to grow at best, and I had many early failures while searching for the right growing conditions. Finally, after installing the shade house and experimenting with several combinations of conditions, I found what seemed to work fairly well. I started out with the plants in the darkest area of the shade house, subject to periodic overhead watering, and fairly far from the three fans I have installed. This was a very bad combination of conditions, and the plants did very poorly. Over the course of several months, I moved selected plants to different locations until I found the best combination.

To my surprise the rex cultivars and those from Asia with "rhizomes at or below the surface and upright stems" all liked much more light than I initially suspected. They also like lots of air. Now I grow them in the brightest location in the shade house, probably at 40 to 50 percent shade (but no direct sunlight) with an oscillating fan constantly blowing across them. I use clay pots, not plastic, for all plants 4 inches or over. The clay pots insure the plant roots stay moist, but allow good air penetration too. The combination of periodic overhead watering, constant air movement, and high light seem to work. The wet mats below the pots also beneficially modify the ambient air temperature. In the summer, the shade house stays about 10 degrees below outside temperature. In the winter, the temperature stays about equal to outside temperature (less water evaporation hence little-to-no cooling). I also modify the shade house temperature with three electric space heaters that keep minimum temperatures above 35 degree F. In this environment, rex cultivars such as B. 'Merry Christmas" still go dormant in winter, but live to see another spring.

The real success story comes with a series of Rex begonia I obtained from **Tim Anderson** of Palm Hammock Orchid Estates. He has numerous outstanding rex cultivars, some of which are derived from crosses of *B. deliciosa* and Rexes such as *B.* 'Bob Cochran'. These plants are classified as Rexes, but have the "rhizome at or below the surface with upright stems". The environment described above, seems ideally suited for these cultivars. I feel that high light, constant air flow, and high humidity are the keys to success. I currently have plants such as *B.* 'Flash Dance', 'Deco Delight', and 'Caribbean Clown' as well as *B.* 'Charles Jaros', 'Cynthia Bishop', 'Dale Sena', and 'Little Brother Montgomery' all growing well in the shade house, through out the year.

Other begonia, species or cultivars, of any growth habit also seem to thrive in the shade house. I am especially pleased with growing the small to medium sized rhizomatous plants. The larger rhizomatous plants can successfully grow outside in the warmer months of the year, but the smaller ones need protection from the wind, rain, and small animals. This is also a great place to relax, sip a cool lemonade, and listen to bluegrass music.

Many growers consider the shade house a "poor cousin" of the greenhouse. That may be true (it certainly is much cheaper to build) but it is a very good alternate and should be considered by anyone wanting a good, effective growing environment for their begonia collection.

Please note that you can find the contact information on all ABS officers and committee chairs on the inside back cover. Bill's address is there. It also gives the contact information on the ABS membership chair who is the person to contact if your Begonian *does not arrive safely.*

COMING EVENTS

May 27-30, 2004, Southwest Region Get-Together: *Begonias Caliente*! San Antonio, Texas. Hilton San Antonio airport, 622 Northwest Loop 410, San Antonio, TX 78126, Packets are out. If you have not received a packet, contact Valerie Morris at *valeriemorrisrn@hotmail.com.*

August 24-29, 2004, ABS Convention: *Back to the Future*, San Diego, CA. Town and Country Hotel and Convention Center. Packets will be out in April. There is now an email address for the convention: 2004absconvention@cox.net

2005 Association of Australian Begonia Societies National Conference in Beautiful Ballarat. Convention Chair is Diana Lawrey who may be contacted at (03) 9898 8863.

July/August Issue is Directory Issue; please get any changes to me by May 1; feature articles due by May 1; announcements closing date is May 15.

The Begonian

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