

THE

BEGONIAN



July/August 2014



Cane begonia blooming at the Montreal Botanical Garden
Photo by Craig Boyajian

The Begonian

Publication of the American Begonia Society

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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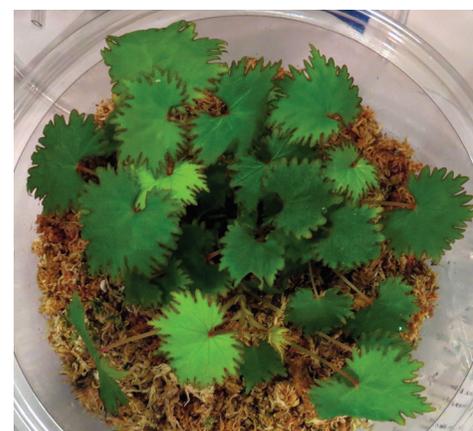
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ABS Board Meeting - Ft. Worth pg. 128



Evolutionary Relationships pg. 131



SWR Best species *B. lyallii* ssp. *lyallii* f. *masoaloensis* pg. 142



My Private Jungle pg. 152

Front cover: Freda's Mystery Begonia - read about it on p.129.

Back cover: *B. erythrocarpa* growing in the Ecuadorean Andes cloud forest - p. 134

Contents

- 124 President's Message
- 125 2015 ABS National Convention - Welcome to New England!
- 126 Special Projects Within the ABS
- 126 Correction
- 127 Holiday Greetings Donation Request 2014
- 127 Letter to the Editor
- 127 "Begonias and Butterflies" 4th Exhibition and Sale
- 128 ABS Annual Board Meeting
- 129 Freda's Mystery Begonia
- 131 The Evolutionary Relationships of *Begonia boliviensis*
- 134 Begonias of the Western Andes of Ecuador
- 140 SWR Show in Shreveport
- 142 2014 SWR Get-Together Show Results
- 144 Potting Mixes and Peat Quality
- 147 We Don't Grow Plants
- 148 Clayton M. Kelly Seed Fund
- 149 Palos Verdes Begonia Society 24th Annual Begonia Show and Sale
- 150 A Word With You: Blade
- 152 My Private Jungle
- 154 Bees Get a Buzz From Caffeine
- 156 ABS Bookstore
- 158 Westchester Begonia Society 55th Annual Begonia Show and Sale

President's Message



B. 'Fireworks' exhibited by Steve's Leaves at the SWR in Shreveport
Photo by Johanna Zinn

By the time you read this the Southwest Regional Get Together will be over. We had wonderful seminars, great tours, and time to catch up with old friends and to make new ones. Congratulations to Freda Holley for her organizational skills!

Be sure to share your "survival" tips with our Horticultural Correspondent, Greg Sytch.

We all continue to experience unusual weather - 105° in California, 20° below the normal temps in the Chicago area, and rain-rain-rain in other places. What do you do to cope with the unusual conditions in your area?

Everyone please mark your calendar for the annual meeting to be held in Ft. Worth in August. Also, it's not too soon to plan for Boston's "Begonia Revolution" at the end of July-beginning of August 2015. This promises to be a great convention.

Have a great summer, and I hope to see many of you at the Annual Meeting in Ft. Worth!

Virginia Jens, ABS President

2015 ABS National Convention - Welcome to New England! July 29–August 2, 2015

Buxton Branch is hosting the 2015 convention and hopes you will attend. There will be plenty to do. New England has over 12 million annual visitors from across the country and around the globe and is renowned for its museums, world-class educational institutions, champion sports teams, as well as its place at the very forefront of American history. Consider extending your stay at the convention so that you can enjoy all that New England has to offer. A sample of Boston sites include:

- Freedom Trail • Paul Revere House
- Museum of Fine Arts • Isabelle Stewart Gardner Museum • U.S.S. Constitution Museum

For Boston information visit www.Cityof-Boston.gov/visitors/. On this webpage, click on "Trivia" for interesting and entertaining facts about Boston.

Stay tuned! In the next Begonian we'll have more info about New England, including spectacular Providence, RI! Visit Buxton's website at www.BuxtonBegonia.org.



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Special Projects Within the ABS

From Charles Jaros

The American Begonia Society has several projects within the Society and all rely on donations.

The Morris Mueller Scholarship Fund: This fund was set up to assist college/university students in the furtherance of their studies of begonias and Begoniaceae. As many who attended the 2014 ABS Convention in Tampa, Florida a report was given by Ohio State University on the studies of begonia seeds that was partially funded to a graduate student by ABS. To date four scholarships have been funded.

The Ft. Worth Botanic Garden: At the ABS Board Meeting at the 2014 Southwest Regional Get-Together in Shreveport, Louisiana the ABS Board voted to help fund yearly the Begonia Collection at the Ft. Worth Botanic Garden. This begonia collection is the largest of its kind in the United States and support from the ABS, its Branches and members is crucial to continue its operation.

The Conservation/Research Fund: This fund helps supports the wonderful collectors who travel around the world in search of new begonia species and begonia species. Often seeds are available to the ABS Seed Fund and donors from these expeditions and reports of the travels are published in *The Begonian*.

The Thelma O'Reilly Fund: This fund was set up to assist in the reprinting of begonia material. Current printing has the "U" Numbers and its update and in the past the reprinting of *Begonias* by Ed and Millie Thompson.

The Millie Thompson Publication Fund: This fund was set up for assist in fund new written material on begonias. The most recent funding was the book by Freda Holley on hybridizers available through the ABS Bookstore.

All these projects rely on donations from ABS members and its ABS Branches - please be generous. Donations can be made though ABS Treasurer, Carol Notaras. Be sure to annotate which fund the donation is for on the check. Checks from individual ABS members are tax deductible.



Correction

This photo of *B. "Island Magic"*, which appeared on page 106 of *The Begonian* May/June issue, was taken by Butch McDole.

Our apologies for any confusion regarding the photographer's credit. Thanks very much to Butch for sharing this beautiful image.

Holiday Greetings Donation Request 2014

First of all, a big THANK YOU to those who have already responded with a donation to Holiday Greetings for 2014. The deadline for donations is September 12, so there is still time for everyone else (individuals as well as branches) to offer their holiday greetings and support ABS and *The Begonian* at the same time. Please help spread the word about this annual program by requesting that it be added to the agenda of your next meeting.

Donors will be listed on one page of the November/December issue of *The Begonian* by category of donation. The categories are: Bronze, \$1-\$50; Silver, \$51-100; Gold, \$101-\$150; and Platinum, \$151, plus. The contributions, which are tax-deductible, should be made out to ABS Holiday Greetings. Please send to Frances Drescher, 11529 Riverchase Run, West Palm Beach, FL 33412. Although checks will be accepted through September 12th, they will not be deposited by the treasurer until September 1st, the beginning of the new fiscal year. If you have any questions, you may contact Frances by email at fkdrescher1@comcast.net.

Letter to the Editor

Dear Editor,

I just visited the Barnes and Noble web site (www.bn.com) and discovered nine of Millie Thompson's *Begonias* books, priced from \$54.74 to \$185.00, depending on condition. For any of you that want to learn more about growing begonias this is the book to have. And there are a lot more books on begonias, too. This is the most begonia books I have seen in one place in a long, long time.

Bobbie West, (bboopfans@aol.com)

"Begonias and Butterflies" 4th Exhibition and Sale

The Doug Frost Branch in Stanton, CA is sponsoring its 4th Exhibition and Sale of begonias at the Sherman Library & Gardens, located in Corona del Mar, CA, 2647 E. Coast Hwy. The dates are July 12-13, 2014. The show will be open from 10:30am to 4:00pm.

Experience a fascinating variety of beautiful begonias on display and for sale. Members of the branch will discuss the care and propagation of begonias throughout the show.

Admission to the Sherman Gardens is \$3.00 and includes free access to the begonia show. Everyone is welcome. For more information please contact Bobbie West at (714)816-0717, or e-mail bboopfans@aol.com.



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ABS Annual Board Meeting

Fort Worth, TX
 August 22–23, 2014

Friday, August 22

- Ft. Worth Botanic Gardens, Begonia collection
 - Lunch in Garden Restaurant
 - ABS Annual Business Meeting

Saturday, August 23

- Steve's Leaves (stevesleaves.com) Since Steve's Leaves is not open to the public this will be a wonderful opportunity
 - Lunch at County Line Restaurant
 - Member's plant swap

Reservations

Hilton Garden Inn- Fort Worth Medical Center
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 Phone: (817) 921-0788; Fax: (817) 921-0799

Use the code "ABS" or American Begonia Society for rates of \$119 king or two queens – up to two in a room.

Rates apply for two days before and two days after.

Registration forms on-line (begonias.org)
 or from Cheryl Lenert (lenert@flash.net)

Freda's Mystery Begonia

by Freda Holley in Northeast Louisiana

The climb from a begonia bloom cross pollination to a mature plant is a long and perilous journey. Sometimes a hybridizer can be jubilant with a cross only to see it become almost a duplicate of another hybrid. For example, I have always loved Stewart Narron's crosses with *B. dipetala*, so of course I have made many crosses from that species too. One of the resulting seedlings was a begonia I called *B. 'Oklahoma Sinbad'* because it was an almost exact duplicate of *B. 'Sinbad'* except that it didn't get mildew. In the end I dropped it because the difference was just not great enough. Another possibility is that of getting a stray species seedling in a set of seedling crosses, sometimes because a species used in the cross self-pollinated, sometimes because in planting other seed at the same time, a seed strayed. Usually that error is easily remedied because the species is quickly recognized. But not always.



"Personally, I love this plant. First of all, it grows big, a requisite requirement to win my affection."

In 2008 I made a cross on Tim Anderson's beautiful Rex, *B. 'Comet Hale Bopp'*. I harvested the seed; the mother plant went dormant and never returned - a not unusual event in my life with Rexes. The cross was with itself and with *B. roxburghii*, which has been incredibly robust here in my taxing environment. In 2009 I planted some of the seed. A seedling usually takes about 2 years to show its possibilities and in 2011 I had 3 seedlings from that cross that seemed promising. I sent the two best of those off for testing. Then someone jolted my memory and I compared the first of my choices to photos of the parent plant and found the child to be almost a duplicate. Thus, the plant, which had turned out to be incredibly hardy and easy to reproduce, could not be passed on.

The second seedling, the one not originally sent out for testing, had no center spiral, but much of the coloring of the parent with more highlights. I have named this one *B. 'Louisiana Moonlight'* and am making it available at the Shreveport SWR Get-Together more for its free flowering, ease of propagation, and indifference to our heat and humidity than for its beauty. It should make a good parent for future hybrids.

continued

It's the third seedling that is the topic of this article though. From the beginning it has been different. It has certain characteristics that are reminiscent of *B. 'Comet Hale Bopp'* and even more of *B. roxburghii*. For example, it has faint dots on the leaves with a stiff hair protruding as does the mother plant look-alike. These can be felt with a brush across the leaves. It also has its red stems and red flowers. The leaf shape is that of *B. roxburghii*. When it was young, it had the look of a species. I suspected it might be a seed from one of Rekha Morris' Indian species that escaped into my cross since I had also planted some of these at the same time. In fact, I even tentatively identified it as a *B. acetosella* variety at first. As it has matured, however, it is obviously not that species and I have had no other seedlings that came anywhere near it in appearance, nor have I been able to identify it from photos and descriptions of any other of the Indian species.

Personally, I love this plant. First of all, it grows big, a requisite requirement to win my affection, as many of you know. Its growth is very upright - until a stem reaches the point where it wishes to fall over and duplicate itself by rooting at a distance. This too is a characteristic of my *B. roxburghii* plants. It reproduces, in fact, with great ease from leaf cuttings as well. I also like to see the red male flowers peeking out from behind the dark leaves. Oh, did I mention that like my *B. roxburghii*, it is dioecious - despite its prolific blooms only males have appeared. Too, it has grown outside and ignored the last three summers that have been incredibly hot - day after day over 100 degrees - and alternately drought stricken and monsoon-like. It has stopped growing and blooming briefly in the early winter, but never gone dormant, again just as *B. roxburghii* behaves for me. So, to me, in its adulthood it does look like a *B. roxburghii* on which the leaf, flower, and stem coloring of *B. 'Comet Hale Bopp'* might have been imposed.

I'm off to the SWR Get-Together shortly after this is written with multiple duplicates, large and small, of my mystery plant in hopes I can either identify it or claim it as a hybrid.



Despite its prolific blooms only males have appeared on Freda's mystery begonia.

The Evolutionary Relationships of *Begonia boliviensis*

Colin Stuart, California University of Pennsylvania, PA
Photos by Dr. Mark Tebbitt

Throughout this past year, while an undergraduate student at California University of Pennsylvania, I conducted research into the evolutionary relationships of tuberous Andean *Begonia*. A Morris Mueller Student Research Scholarship provided by the American Begonia Society funded this research in part by paying for the cost of some of the laboratory consumables.

The main aim of this research was to investigate the evolutionary relationship of *Begonia boliviensis* (Figure 1) to other tuberous Andean begonia. The reason we were investigating this question is because among Andean *Begonia* this species has a unique flower structure and an unusual scarlet petal color that suggests it is hummingbird pollinated. This is interesting because almost all other Andean begonias are insect pollinated.

In order to conduct my research, my mentor, Dr. Tebbitt, and I had to first extract DNA from *Begonia* specimens that he had collected in



Figure 1. *Begonia boliviensis* photographed in Bolivia.



Figure 2. Preparing a PCR reaction in the molecular systematics lab.

Andean South America preserved in silica gel. To do this we used a commercial DNA extraction kit, following the instructions provided with the kit. After we had extracted the DNA, we prepared it for Polymerase Chain Reactions (PCR) (Figure 2), which is a process that amplifies or makes lots of copies of a particular piece of DNA. With much higher concentrations of this particular section of DNA it was then possible to work with it. We next cleaned the copies of DNA to remove the components of the PCR reaction and then we sent the cleaned product off to Vanderbilt Medical Center for sequencing. DNA sequencing is a process that determines the order of DNA nucleotides along a length of DNA. Nucleotides are chemical compounds that contain the genetic code in all living organisms and which are commonly visualized as the letters A, C, T, G. In order to analyze the resulting sequence data, we had to first prepare the sequences of nucleotides that

we received back from Vanderbilt Medical Center. One essential part of this process was to line up the sequences obtained from the different species so that the nucleotides from each species were directly comparable (Figure 3). This aligning of the data makes it possible to accurately analyze the evolutionary relationships between species. To analyze the data, we used two computer programs, MrBayes and PAUP. These programs use different statistical approaches to build phylogenies. A phylogeny is a visual description of the evolutionary relationships between species, which most people think of as

a family tree.

Our research found that *B. boliviensis* is most closely related to the insect pollinated *B. cinnabarina* and offered clues as to how bird pollination might have evolved in *B. boliviensis*. This close evolutionary relationship between *B. boliviensis* and *B. cinnabarina* is also interesting because these two species are currently classified in different sections of *Begonia*. Our research findings indicating that *B. boliviensis* should be transferred to the same section as *B. cinnabarina* and the other tuberous Andean begonias.

All of my lab work was carried out during the fall semester of 2013. During that semester for several hours a week I worked in Dr. Tebbitt's molecular systematics lab gathering data and learning how to use the various computer programs. The aligning and data analysis was then completed during the spring semester of 2014.

In April 2014 I gave a talk about my research findings at a state wide undergraduate research conference held in Pennsylvania and then in May 2014 I again presented the data but this time in the form of a scientific poster at my university (Figure 4).

This past May I received my Bachelor of Science in Biology from California University of Pennsylvania. This research project gave me the opportunity to acquire practical laboratory experience to both expand my existing knowledge which I had gained in class and to add

to my resume. I am currently applying to go to graduate school to pursue a Ph.D. in the behavioral evolution of primates. This topic might at first seem very different from the study I conducted on begonia, however the lab experience I gained was invaluable to furthering my career in this field. The reason for this is that the techniques used to work with and analyze DNA are much the same regardless of the organism being studied. These techniques include working under sterile lab conditions, isolating DNA, preparing Polymerase Chain Reactions, clean-

ing the PCR product for sequencing, etc. In conducting this research I also gained experience with experimental design, grant writing, and had the opportunity to work one on one with a professor, as I hope to do again at grad school.

Acknowledgement:

I would like to thank the American Begonia Society and Dr. Tebbitt for giving me the opportunity to do research using cutting edge laboratory techniques and for the experience presenting data at scientific conferences, writing research grants, and the honor of adding to our scientific knowledge.

Taxon	Character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1	<i>Begonia_cremnophila</i>	?	?	?	?	?	?	?	?	C	T	G	C	A				T	G	C	A	G	A		C							
2	<i>Begonia_clarkei</i> subsp									C	A	A	T	C				A	A	T	G	C	A	G	A	C						
3	<i>Begonia_newspp</i> euad									C	G	A	T	T	C	C	T	G	C	A	A	C	A	A	T	G	C	A	G	A	A	C
4	<i>Begonia_pearcei</i> ITS_M									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
5	<i>Begonia_clarkei</i> subsp									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
6	<i>Begonia_micranthera</i> f									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
7	<i>Begonia_boliviensis</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
8	<i>Begonia_cinnabarina</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
9	<i>Begonia_pearcei</i> MT									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
10	<i>Begonia_incarnata</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
11	<i>Begonia_olbia</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
12	<i>Begonia_gracilis</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
13	<i>Begonia_lanceolata</i> MT									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
14	<i>Begonia_integerrima</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
15	<i>Begonia_mollicaulis</i> MT									C	G	C	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
16	<i>Begonia_schmidtiana</i>									C	G	C	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
17	<i>Begonia_foliola</i> MT									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C
18	<i>Begonia_fissistylia</i>									C	G	A	T	T	C	C	T	G	C	A	A	A	A	A	T	G	C	A	G	A	A	C



Figure 3. Aligned DNA sequence data from a variety of begonias.
Figure 4. Presenting a research poster at my university.



Begonias of the Western Andes of Ecuador

Article and photos by Dr. Mark C. Tebbitt, California University of Pennsylvania, PA

Ecuador is one of the world's most botanically diverse countries, containing almost as many plant species as the United States, while only the size of the state of Colorado. Despite the fame of Ecuador's Amazonian plant diversity it is the Andean forests that support the greatest diversity of plants, with the outer margins of the Andes being particularly rich in plant species. It is also here on the fringes of this imposing mountain range that most of the country's begonias occur. In a previous article (Tebbitt, 2014) I wrote about the begonias of the eastern slopes of the Andes and neighboring Amazon lowlands. In this article I will discuss some of the begonias found along the western slopes of the Andes.

Despite being separated by a distance of only 25 to 45 miles the forests along the eastern and western sides of the Ecuadorian Andes are remarkably different. The Amazonian side receives more consistent and overall higher levels of rainfall, and it is home to

lush montane forests. On the other hand, the western fringe of the Andes receives more seasonal and overall lower amounts of rainfall and have a distinct kind of cloud forest in which plants receive much of their moisture in the form of fog and associated drizzle. As a consequence of this habitat difference, and the fact that high mountain peaks and associated tundra-like vegetation (Figure 1) separate the two flanks, the two sides are home to quite different begonia species.

Because less moisture is available to the begonias of Ecuador's western Andes many of these species have evolved adaptations to combat drought. Begonias with underground tubers and other kinds of swollen rootstocks abound in this region, as do those with thick water-storing stems. Such features allow these plants to lose their leaves and remain dormant during the driest times of year. A few of these species, such as *B. froebelii* and *B. ludwigii*, will be well known to begonia enthusiasts but

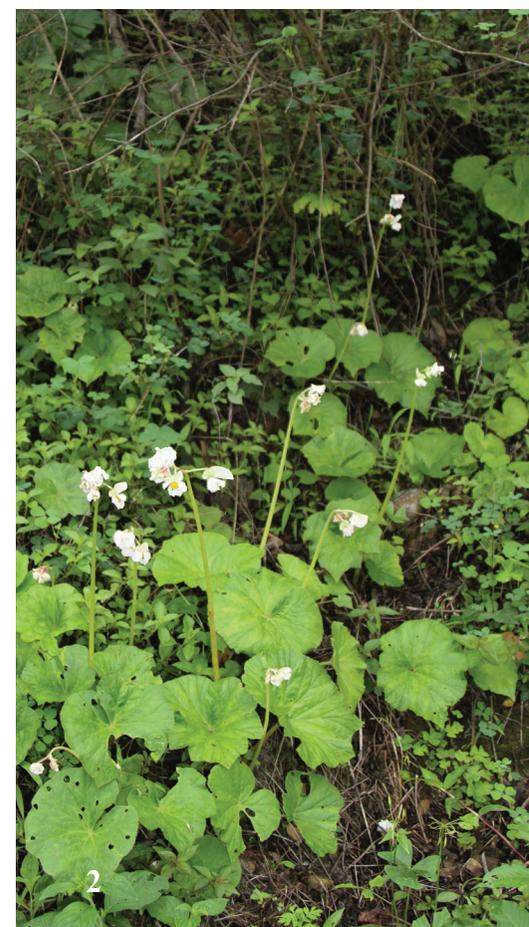
most of these species are little known.

My exploration of this area began in the far south of the country, close to the Peruvian border. This area is particularly interesting as it is geologically older than the Andean region to the north and also considerably drier since its mountains are lower and therefore catch less moisture. Consequently it has a different begonia flora from the rest of Ecuador and one that is more similar to that of northern Peru. In fact one of the first plants that we found was *B. tumbezensis* (Figure 2), a tuberous species that had previously been described from Peru but not from Ecuador. This species is very similar to the better-known *B. octopetala* but is smaller and noticeably differs by having toothed petals (Figure 3). In several places plants were seen just emerging from the ground and coming into bloom in mid January at the start of the region's wet season. After a great deal of searching we also found a single small colony of *B. octopetala*. While similar in appearance to *B. tumbezensis* it was growing 1,600 feet higher in elevation than any of the populations of this species we had seen and occupied a different ecological niche. Another interesting tuberous begonia found in this area was *B. parcifolia* (Figure 4), a poorly known species that I was particularly keen to study in the wild. This species is interesting since compared to most other tuberous species it grows not only at relatively low altitudes but also inhabits unusually arid conditions (Figure 5). It is a pretty little species but one that would likely prove a challenge to cultivate given its preference for semi-arid gravelly cliff habitats in full sun.

From this region bordering Peru we drove north

Figure 1. Ecuador's tundra-like vegetation known as páramo separates the Andean begonias into those found on the lower elevation eastern and western margins of this mountain range. Figure 2. *Begonia tumbezensis*, having just emerged from dormancy in mid January.

Figure 3. Distinctly toothed petals distinguish *B. tumbezensis*.





to the town of Piñas, in El Oro Province. Here, high up in the mountains above the town, we found another new record for Ecuador, the very rare *B. bifurcata* (Figure 6). This plant had again been described from Peru but never from Ecuador. Prior to this expedition I had seen a single unnamed herbarium specimen that had been collected in this area by a Swedish botanist. We were lucky to relocate the species. After a long drive up into the mountains we came upon just two plants. Fortunately both were in full flower. After spending two hours photographing and writing a scientific description of this species it was rather late in the day so we reluctantly had to make our way down the mountain back towards the town of Piñas. There on the outskirts of town just as night was approaching I was amazed to find a species of tuberous *Begonia* new to science. Since returning to the states and rereading my copies of *The Begonian* I have learned that Scott Hoover had previously found this species back in 1988 (O'Reilly, 1995) but it has never been named. That evening I collected herbarium material and now I plan to name it, on the request of an Ecuadorian colleague, after the Puyango River near which it was found. Later that night we drove back south in order to visit the town of Loja where the next day we were required to validate our collecting permits, finally getting to our beds around three in the morning!

The next day, after an early morning visit to the ministry of the

environment, we drove north again to the much wetter region centered around the small mountain town of Huigra. As was common on these western slopes we started off by driving through sun drenched farmland and then suddenly we encountered a patch of dense fog where begonias grew. The most memorable species we found in one of these patches of permanent fog was *B. froebellii*. This tuberous species grows in huge populations on the fog-soaked cliffs near Huigra, its large, vivid scarlet flowers providing a spectacular sight in the misty landscape (Figure 7). Another plant that grows on the cliffs around Huigra in great abundance, though at lower elevations is *B. ludwigii* (Figure 8). Its abundance was a great surprise to me as the species is currently listed on the IUCN red list as endangered, being recorded from just four populations near Huigra. This is not, however, the case. We found it to be common at several sites both near Huigra and near Piñas, with the latter representing the first records of this species from El Oro Province. In several sites this species had remarkably thick stems up to 1.75 inches across and often well over two feet tall. That such a common and easily recognized plant was previously so poorly documented demonstrates just how little studied the Andean begonias are. The same situation was also found with *B. serotina*, which again is listed as endangered but was found by



Figure 4. *Begonia parvifolia* is a poorly known tuberous species found at relatively low elevations. Figure 5. Semi-arid montane habitat of *B. parvifolia* and *B. tumbezensis*.

Figure 6. The beautiful but very rare *B. bifurcata*. Figure 7. Botanist Adolfo Jara Muñoz walking through the fog to see *B. froebellii* growing on a steep roadside cliff.





us in several sites, some of which contained hundreds of plants. *Begonia serotina* (Figure 9) is an interesting plant. It has large umbrella-shaped leaves very similar to those of *B. nelumbifolia* and even has a quite similar dichotomously branched flower stalk that produces lots of tiny white flowers. It is different in numerous other ways though, and the two are likely not closely related. I was keen to study *B. serotina* so that I could determine if it was tuberous or rhizomatous. It was difficult to tell which was the case from the dried herbarium specimens that I have previously studied in various museum collections. Once I saw this plant in the wild I understood why I had been so uncertain. *Begonia serotina* has a very unusual, thickened above ground stem that typically grows horizontally along a rock face for several

inches but will then suddenly grow upwards for a short distance and produce leaves and a group of flowers at its tip. Previously, when examining the dried museum specimens I had presumed that the stem was buried, so seeing the plant in the wild was a revelation. Another interesting and even more beautiful thick-stemmed species that grew near the town of Huigra was *B. erythrocarpa* (Figure 10). We found this species growing as an epiphyte rooted in the thick moss that swathed the branches of the low growing trees of the cloud forest. On the ground of this same mist quieted forest we found the fibrous-rooted *B. piurensis*, as well as the rhizomatous *B. aequatorialis*, although the latter was only just emerging from dormancy in mid January. The beautiful flowers of this species would not open until much later in the year, when an entirely different assemblage of begonia species would join it in bloom.

In total, we encountered 18 different begonia species during the week we spent botanizing along the western flank of the Ecuadorian Andes, only one of which, *B. tiliifolia*, we had encountered previously on the eastern slopes of the Andes. Our discoveries suggest that Ecuador has many more begonia surprises yet in store.

Acknowledgements:

I wish to thank the ABS and its members for their generous financial support of this expedition and Mr. Jacky Duruisseau for interesting begonia discussions. I am also grateful to Mr. Álvaro J. Pérez Castañeda (QCA) for providing logistical support and Mr. Adolfo Jara Muñoz (ANDES) and Ms. Cristina Toapanta (QCA) for accompanying me in the field.

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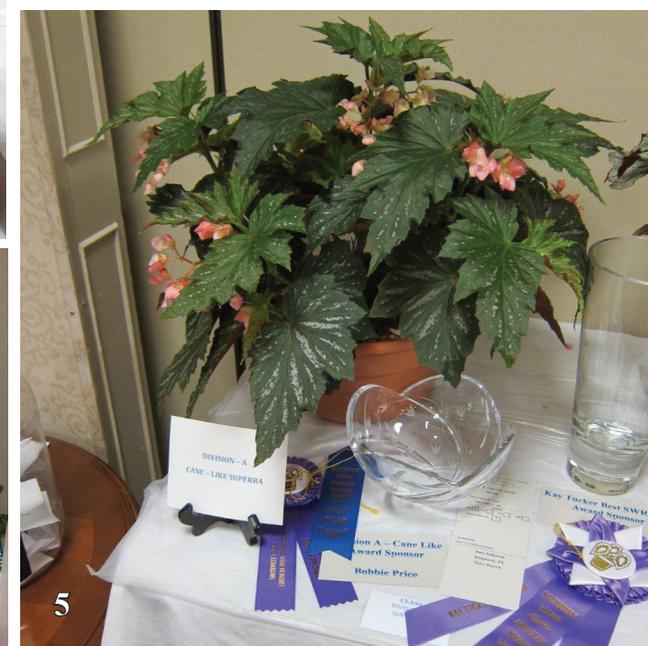
Figure 8. *Begonia ludwigii* and *B. piurensis* dotting a hillside near the town of Huigra. Figure 9. *Begonia serotina* is a poorly studied, thick-stemmed species with an unusual growth habit. Figure 10. Beautifully patterned *B. erythrocarpa* growing in moss on the branches of a cloud forest tree.



SWR Show in Shreveport

Fig. 1 Best of Show entry Contained Atmosphere: 'Pink African Violet' Begonia **Fig. 2** Lynn Sissney (Austin Area Begonia Society Branch) and her Best of Show entry **Fig. 3** *Begonia* 'Double Jeopardy' **Fig. 4**. Bobbie Price, Deborah Garrett, Don Miller – Fort Worth Botanic Garden Photos by Ken Fuchs

Fig. 5 *Begonia* 'Lana' Photo by Johanna Zinn **Fig. 6** Best Artistic Display/ Educational Display – Fort Worth Botanic Garden **Fig. 7** *B. dregei*. exhibited by Cheryl Lenert **Fig. 8** *B.* 'Dancing Yee Haw' exhibited by Charles Jaros Photos by Ken Fuchs



2014 SWR Get-Together Show Results

May 22 – 24, 2014 Shreveport, LA

91 Entries 18 Exhibitors

Best of Show

B. 'Pink African Violet Begonia'
Exhibitor – Lynn Sissney

Sweepstakes

Doug Byrom
6 Blue Ribbons

Ed & Millie Thompson Showing is Sharing

Freda Holley
18 entries

Best Southwest Region Hybrid

B. 'Matchmaker'
Exhibitor – Jane Anderson

Best Species

B. *lyallii* ssp. *lyallii* f. *masoaloensis*
Exhibitor – Doug Byrom

Kay Tucker Award for Best Cane

B. 'Lana'
Exhibitor Jane Anderson

Best Artistic Display

Educational Display
Ft. Worth Botanic Garden

Cultural Certificates

Doug Byrom

B. *lyallii* ssp. *lyallii* f. *masoaloensis* – 97 pts
B. 'Salisbury Surprise' – 96 pts

B. *palmata* – 96 pts
B. U501 – 95 pts

B. *elaeagnifolia* – 95 pts
B. *bogneri* – 95 pts

B. 'Maid Marion' – 95 pts

Steve's Leaves

B. 'Smokey Eyes' – 97 pts
B. 'Double Jeopardy' – 96.5 pts

B. 'Moonlit Snow' – 96 pts

B. 'Fireworks' – 95 pts

Charles Jaros

B. 'Penny Lahn' – 96 pts

B. U497 – 95 pts

B. 'Dancing Yee Haw' – 95 pts

Jane Anderson

B. 'Lana' – 97 pts

B. *hispida* var. *cucullifera* – 96 pts

Lynn Sissney

B. 'Pink African Violet Begonia' – 97 pts

Tom Keepin

B. 'Withlacoochee' – 96.5 pts

Dianna Wilkerson

B. U476 – 95 pts

Carol Orozco

B. 'Pink Diamond' – 95 pts



B. U497 exhibited by Charles Jaros (left). *B.* U476 exhibited by Diana Wilkerson (right). Photos by Ken Fuchs

Don Miller

B. 'Tiny Gem' – 95 pts

Cheryl Lenert

B. *dregei* – 95 pts

Special Cultural Certificate

Educational Display – 100 pts
Ft. Worth Botanic Garden

Division Awards

Division A – Cane-Like

B. 'Lana'
Exhibitor Jane Anderson

Division AA – Cane-Like, All Others

B. 'Matchmaker'
Exhibitor Jane Anderson

Division B – Shrub-Like

B. 'Penny Lahn'
Exhibitor Charles Jaros

Division E – Rhizomatous

B. 'Dancing Yee Haw'
Exhibitor Charles Jaros

Division G – Rex Cultorum

B. 'Pink Diamond'
Exhibitor Carol Orozco

Division H – Trailing-Scandent

B. 'Tiny Gem'
Exhibitor Don Miller

Division I – Contained Atmosphere

B. 'Pink African Violet Begonia'
Exhibitor Lynn Sissney

Division J – Species

B. *hispida* var. *cucullifera*
Exhibitor Jane Anderson

Division K – "U" Numbers

B. U497
Exhibitor – Charles Jaros

Division L – Hanging Containers

B. 'Withlacoochee'
Exhibitor Tom Keepin

Division Q – Traveling Begonias

B. *dregei*
Exhibitor Cheryl Lenert

Division T – Commercial

B. 'Double Jeopardy'
Exhibitor Steve's Leaves

Division VV – New Introductions/ Commercial Grower

B. 'Smokey Eyes'
Exhibitor Steves's Leaves

Division WW – Photographs

B. 'Spotches'
Exhibitor Johanna Zinn

Division Y – Display

Educational Display
Exhibitor – Ft. Worth Botanic Garden



B. 'Tiny Gem' exhibited by Don Miller. Photo by Ken Fuchs



B. 'Match Maker' exhibited by Jane Anderson. Photo by Ken Fuchs

Potting Mixes and Peat Quality

by Greg Sytch, Horticultural Correspondent

In the Mailbox

Most of us grow with our own choice of potting mix. We either choose a certain brand, or have our own recipe that has worked well over the years. However, lately, I have found that the consistency in the soil that I have been using has been erratic. My choice brand is Fafard 2. It is a good product of quality peat, with some perlite and vermiculite added and lime to adjust ph. Using Fafard for years, I have usually been very pleased with my results. I do add additional ingredients to ensure better drainage.

Recent years have shown a decline in the quality of peat. The peat bogs that we harvest from are aged - the peat has been curing for

a very long time. But as the growers need for more peat to use as their base increases, inconsistency in quality occurs. I have found that to be true even with Fafard. The begonia newly potted that was thriving, then suddenly struggles, could be a result of this issue. It is food for thought when you cannot put a finger on what the cause is. Keeping this in mind, pay attention to your soil mix.

To combat this, I have been adding pine bark fines to my mixes for years. Luckily, I have a supply at a local retail outlet that is inexpensive, and has the small bits of pine bark that I feel aids drainage. While pine bark also

decays and can rob the soil of nitrogen, it is easily countered by using a higher nitrogen fertilizer, such as 30-10-10. I usually use the higher nitrogen ratio anyway, aiming for at least 2:1:1.

Product Availability

Not all potting mixes are available equally across the country. Many are regional. Since begonias prefer a light, well-drained mix, it may be important to stock up a little if you find a mix that does well for you. I try to have 5-6 bags stored in my garage at all times. Once I recall my brand was “no longer available”, and for the following year I searched for an alternative only to make my own mix. This worked well, but was a lot of work and used up time I rarely have. Then the brand of peat I liked went away. Luckily, I found my Fafard 2 once again.

It has been my experience that using my potting mix a little on the dry side is best. I always open my bag ahead of time and allow air to begin drying the peat some. As I am mixing my ingredients - Fafard 2 with about 15% perlite added, then I eyeball the pine bark fines so I can see it evenly distributed throughout the mix - I find the mix easier to thoroughly incorporate. I can always water in a newly potted plant well, but if it is too wet it seems to take forever to dry out!

Perlite Quality

Not all perlite is created equal. I am sure many of us have found that out using a freshly opened bag that sends particles floating up towards us. There is a reason it is recommended you use fresh perlite outdoors, or wear a mask indoors. This super heated rock is, like many other resources, becoming more scarce and therefore quality suffers. Look for “Horticultural Perlite” on

the package. One way to combat this dust is to open it ahead of time and leave it. Allow the air to push in and settle it. It helps some. I have always noticed that as I use the bag, dust becomes less bothersome.

Sponge Rock is coarse, large perlite less processed. I love using it for my orchids, and to mix in those begonias that really require extra drainage, but it is costly. I cannot find a local source so I have it shipped in from Miami. Because of its cost, I use it sparingly.

Pine Bark Fines

What are pine bark fines? Usually used in landscaping as a mulch, finely chopped pine bark is a great addition to potting mixes for its ability to increase drainage, and is inexpensive. Here in Florida, our plentiful and native pine trees provide the sourcing. As pine trees have sap, check out your local source to ensure there is almost no sap in your product. Much like orchid bark, pine bark can steal away nitrogen as it decays, so be aware and counter with that higher nitrogen fertilizer.

Vermiculite

Another great additive to potting mixes, vermiculite comes in different sizes and quality, and finding Horticultural Vermiculite in the larger size works best. Vermiculite is used to prevent a potting mix from compacting. It can and does hold moisture, and fertilizer, and the quality has not been as inconsistent. Smaller, fine vermiculite works best for seedlings and tender rooted begonias. I have always found that about 5% of the mix is adequate.

If you ever have any questions, please feel free to contact me at gsytch@cs.com. Additional contact information is listed at the end of *The Begonian*.

Good Growing! Greg

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B. nelumbiifolia (above) and *B. thiemei* (opposite page) both at the Montreal Botanical Garden
Photos by Craig Boyajian

We Don't Grow Plants

Bob and Dee Stewart, Stow, MA

This may seem like a strange thing to say, given that we probably have over a thousand plants growing in the greenhouse. Sometimes it is helpful to stop and realize that none of us magically cause plants to grow. Instead we provide some set of conditions, and the plants grow or die by their own internal processes.

If the conditions that we provide just happen to fall within the range of conditions that the plant will tolerate, then the plant grows; if not, then the plant will fail. The point here is that if a plant is not growing for you, it is not because the plant is magically sensing that you are an inadequate human being, it is because the plant does not like the conditions pure and simple.

If you change the conditions then the plant may grow. I know a lady who now has by far the best plant of *Drymonia decora* (a gesneriad) in cultivation. She tried it in one spot in her greenhouse and it did not thrive. She moved it to another spot and it still was

not happy. She brought it into the house and put it on a windowsill without good results. She moved it to a windowsill in the next room (same direction) and it started growing like mad.

Another part of becoming a “better grower” is learning to recognize signs suggesting what conditions the plant wants changed. Sometimes you can tell that the plant wants more or less light, more or less water, or some other change. Sometimes it helps to read books, or to find out what the conditions are like in the plant’s native habitat.

Some plants require conditions that we are not willing to provide. We do not grow certain plants in our greenhouse because the plants require temperatures that are higher than we are willing to provide in the winter. If you want to be known as a “good grower” it helps to acquire plants that suit your conditions, and to throw out plants that do not suit your conditions (rather than allowing them to hang around looking awful).



Clayton M. Kelly Seed Fund

The Margaret Lee Branch
San Diego County, CA

The seed fund is a service to members only. It is a privilege of your membership. Please self-pollinate your species begonias, collect the seeds and send them to the seed fund. We depend on your contributions of seeds to make a wider variety of species available to the members. The Seed Fund now offers a PayPal option. This option is available through the ABS Website. Go to the Seed Fund Page and select the link "Current Seed Listing pay with PayPal". There is a small "PayPal" fee plus the "shipping and handling" fee to cover the cost of using PayPal. Choose the fee amount in the drop down menu at the bottom of the page as with the shipping and handling drop down menus. By policy, new seed additions are made after they are first published in *The Begonian* and updated as supplies vary while filling orders. This is the best source for the current available seed list. Packets of seeds are \$2.00. Very rare seeds and newly collected seeds will be \$3.00 or more per packet when noted. California residents please add 8.75% sales tax. All orders must be accompanied by check or money order, payable in US funds ONLY to the Clayton M. Kelly Seed Fund.

American Begonia Society
Clayton M. Kelly Seed Fund
Michael Ludwig
6040 Upland Street
San Diego, CA. 92114-1933

New Seed Fund e-mail address:
claytonmkellyseedfund@yahoo.com

Cost 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.

DISCLAIMER: The seeds distributed by the seed fund are identified as received from the donors. The species names (in italics) reported here are correct based on the latest information from *BEGONIACEAE, Ed. 2*; Golding, and Wasshausen. Hybrid names are made consistent with the *ABS Check List of Begonia Hybrids* edited by Howard Berg dated 9/13/2005.

New Seeds

B. cardiocarpa Liebm. (Gireoudia)
Rhizomatous

B. carolineifolia Regal (Gireoudia)
Rhizomatous

B. convolvulacea A.DC
(Wagneria) Scandent

B. dichtoma Jacq. (Pritzelia)
Thickstemmed

B. odorata alba (Begonia)
Shrub

B. reniformis Dryand (Pritzelia)
Thickstemmed

B. 'Irene Nuss'
Cane

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B. 'Tom Thumb' grown by Virgil and Janice Griffith. Photo Ted Johnson

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A Word with You: Blade

Early on, my vocabulary sleuthing for *A Word with You* seemed to indicate that leaf and *blade* were synonymous. Now I know better. Mr. Webster says *blade* comes from Middle English *blad*, *blade*, and that ME from Anglo Saxon *blaed*, a leaf. Well, there you have it. Another enduring word from the Anglo Saxons. No Cassell's this time. But *leaf* got more complex once the botanists got hold of it; they gave it more than one part – the *blade* is just one of those.

Jack Golding says, “The structure of all Begonia leaves consist of the **blade** [the expanded part], the **petiole** [leaf stalk] and a pair of **stipules** [a small ear-like appendage at the base of the petiole].” We’ve covered petioles and stipules, and maybe those terms are firmly planted with you. Tebbitt’s glossary defines *blade* as, “Broad part of a leaf, petal, or sepal.” The Thompsons are right there with, “Expanded portion of a leaf.” What I used to call the leaf then is really the *blade*.

Begonia *blades* are usually flat and thin. But within that flat structure a lot goes on. That *blade* is actually a layered, complex organ that makes the most of its exposure to light and thereby maximizes its function, photosynthesis – pro-

ducing food for the plant.

All that food production makes *blades* attractive to herbivores, such as my woodchuck, who has reappeared, or at least a family member has. Since the begonia has spent considerable energy producing its *blades*, its survival adaptations include complex protective measures such as hair, unpalatable surface texture/coating, unappetizing taste, none of which deter my woodchucks.

The *blades* are what made me fall in love with begonias in the first place. The more I looked, the more their diversity captivated me. Their dramatic foliage is colorful, shapely, distinctive. For me it’s all in the leaves, rather the *blades*.



Leaves - or blades - of *B. 'Elaine'*. Photo by Craig Boyajian

Scandent or Acaulescent?



Begonia integerrima (which most of us received as *B. solananthera*, but were corrected by Mark Tebbitt in his book). Photo by Kingsley Langenberg

Watch for the answer in your next *The Begonian* brought to you by A Word With You!

Last month's answer to Picture Quiz

March 2014 issue, page 48 – *B. homonyma*

Caudex or corm?

And the answer is... CAUDEX

A *caudex* is really a stem, but a thickened woody one, usually above ground.

See *The Begonian* May 2013, p. 102.

My Private Jungle

*Article & photos by Joe Romeo
Prospect, South Australia*

I have always been fascinated by the idea of jungles. This is where Nature does her thing! This is where hidden treasures wait to be discovered. People like Dr. Rekha Morris and others venture out enduring hardships and discomforts to bring back scientific knowledge, pictures, sometime seeds and most of all stories of their adventures. These stories are what broaden our knowledge of the wild world and fires our imagination. Information brought back helps us figure out how to grow those fabulous new species still being discovered in the jungles of the world. Sharing their knowledge also helps us grow our less demanding hybrid plants. Reports by the people in the field also makes us aware of the dire peril faced by the wild species as their habitat rapidly disappears under pressure from the efforts of human agriculture to feed hungry, ever-expanding populations. There are multinational agri-business corporations clearing the jungles, with scant regard for the species lost, being only interested in providing a dividend for their shareholders. Ranting and raving will never be enough to save our species, we must be proactive, supporting financially the people prepared to give of their time so we can see what is out there.

The Tropics have only two seasons, the Wet and the Dry. The Wet season equates to summer in subtropical areas. The Dry Season is winter in the subtropics. This is information I use to grow my begonias, orchids and various other tropical plants. In the tropics, where my plants come from, I have observed that in the morning or afternoon there is a downpour of rain over a short period of time, then the weather clears up. When the weather

clears up the sun shines evaporating the rain that just fell and so the humidity is created which hangs around the rest of the day. I use this information to tailor my growing method. I replicate the morning showers with overhead watering for 10 minutes every morning from mid spring, (or when the temperature gets warmer), to when the temperature starts to get cold which here is usually around mid autumn (fall). Then I taper off the watering for winter, only watering when the plants tell me they are thirsty. Water that does not fall in the pots is not wasted since as it evaporates it provides the high humidity tropical plants require to flourish. Happy healthy plants make me happy and healthy inside.

My downsized growing area is our courtyard bordered by our garage garden shed and house with the fence on the last side. I gave a lot of thought to the roof covering the courtyard in regards to the light requirements of the plants I wanted to grow there. Climate change was a big consideration as too much heat buildup is crucial on our 46°C (114°F) days, which we seem to be getting more of lately. These temperatures spell meltdown for the more delicate and thin leafed plants. The more delicate plants I put in intensive care during this hot period. This involves housing them in modified foam boxes with glass lids. In these containers the humidity can be better controlled. I do this by having a layer of water holding material, (course sand, sphagnum moss, peat moss), in the bottom of the box and keeping it wet with a shower of water every morning. The temperature problem can be alleviated by placing the box on the shady side of the house. The glass lids can be given a lime wash to cut out most of the light, or I can place old bed sheets over the glass on the worst days. Wetting the sheets

also cools the boxes down like an air conditioner. Aquariums lined with sphagnum moss can be used if due consideration is given to where they sit and using extra covering on the danger days. The best of the lot is to have the aquariums in the lounge where you spend most of your time with the air conditioner on to keep you comfortable, also keeping begonias happy, as long as you keep a glass lid on top. To get the right amount of light for the plants you should have a couple of light tubes with special tubes, which give extra ultraviolet light, which promotes good plant growth. The lights need to be on for about 14 hours (an automatic timer helps). For economy most of those hours could coincide with your time in the lounge therefore the overhead lights do not need to be on.

Enough of the technical stuff, now for the real reason for growing begonias and other jungle dwelling plants.

I go out into my jungle room every morning and spend quality time with my plants. I take in all the information my plants give me. One looks unhappy - is it getting enough light where it is? I will shift it and observe its progress. Is that a spot of mildew I see on that Rex leaf? Must be time for a fungicide spray. What beautiful leaves that species has today! My wife pops her head out and asks what I am staring at out there? My reply is that I am observing my plants. I have a love of jungles in my heart.

Do you have a little room for some jungle in your heart? Wild jungles are disappearing at a rapid pace and soon you will only see them on reruns of David Attenborough movies. It is very important that we save as much of the jungle as we can so future generations can enjoy their beauty also, hence my private jungle.



Some views of my Jungle room (above). I go out into it every morning and spend quality time with my plants. Then I take in all the information my plants give me.



Bees Get a Buzz From Caffeine

You may need a cup of coffee to kick start the day but it seems honeybees also get their buzz from drinking flower nectar containing caffeine. Scientists have today shown that caffeine improves a honeybee's memory and could help the plant recruit more bees to spread its pollen.

Publishing in *Science* the researchers show that in tests honeybees feeding on a sugar solution containing caffeine, which occurs naturally in the nectar of coffee and citrus flowers, were three times more likely to remember a flower's scent than those feeding on just sugar.

Study leader Dr Geraldine Wright, Reader in Neuroethology at Newcastle University, explained that the effect of caffeine benefits both the honeybee and the plant: "Remember-

Courtesy of Kew Gardens Press and Media
ing floral traits is difficult for bees to perform at a fast pace as they fly from flower to flower and we have found that caffeine helps the bee remember where the flowers are.

"In turn, bees that have fed on caffeine-laced nectar are laden with coffee pollen and these bees search for other coffee plants to find more nectar, leading to better pollination.

"So, caffeine in nectar is likely to improve the bee's foraging prowess while providing the plant with a more faithful pollinator."

In the study, researchers found that the nectar of Citrus and Coffea species often contained low doses of caffeine. They included 'robusta' coffee species mainly used

Honeybee on citrus flower (top).
Photo courtesy of Geraldine Wright.

Worker bees on honeycomb (opposite page).
Photo courtesy of RBG Kew.

to produce freeze-dried coffee and 'arabica' used for espresso and filter coffee. Grapefruit, lemons, pomelo and oranges were also sampled and all contained caffeine.

Co-author Professor Phil Stevenson from the Royal Botanic Gardens, Kew and the University of Greenwich's Natural Resources Institute said: "Caffeine is a defense chemical in plants and tastes bitter to many insects including bees so we were surprised to find it in the nectar. However, it occurs at a dose that's too low for the bees to taste but high enough to affect bee behavior."

The effect of caffeine on the bees' long-term memory was profound with three times as many bees remembering the floral scent 24 hours later and twice as many bees remembering the scent after three days.

Typically, the nectar in the flower of a coffee plant contains almost as much caffeine as a cup of instant coffee. Just as black coffee has a strong bitter taste to us, high concentrations of caffeine are repellent to honeybees.

Dr Wright added: "This work helps us understand the basic mechanisms of how caffeine affects our brains. What we see in bees could explain why people prefer to drink coffee when studying."

Dr Julie Mustard, a contributor to the study from Arizona State University, explains further: "Although human and honeybee brains obviously have lots of differ-

ences, when you look at the level of cells, proteins and genes, human and bee brains function very similarly. Thus, we can use the honeybee to investigate how caffeine affects our own brains and behaviors."

This project was funded in part by the Insect Pollinators Initiative which supports projects aimed at researching the causes and consequences of threats to insect pollinators and to inform the development of appropriate mitigation strategies.

Population declines among bees have serious consequences for natural ecosystems and agriculture since bees are essential pollinators for many crops and wild flowering species. If declines are allowed to continue there is a risk to our natural biodiversity and on some crop production.

Professor Stevenson said: "Understanding how bees choose to forage and return to some flowers over others will help inform how landscapes could be better managed. Understanding a honeybee's habits and preferences could help find ways to reinvigorate the species to protect our farming industry and countryside."

Reference:

Wright, G.A., Baker, D.D., Palmer, M.J., Mustard, J.A., Power, E. F., Borland, A. M., Stevenson, P.C. Caffeine in floral nectar enhances a pollinator's memory of reward. *Science* 339:6124:1202-1204.



NEW: *Begonia Hybridizing:*

By The Hybridizers, Edited by Freda Holley, published through the Millie Thompson Publication Fund, March 2013. This great new book by Freda Holley is filled with articles written by some of our most famous, prolific and successful hybridizers. It is a philosophy of hybridizing divided into three parts and includes articles by Ross Bolwell, Walter Dworkin, Freda Holley, Gregory Sytch, Chuck Ades, Brad Thompson, Patrick Worley and Rudolf Zieshenne. The pictures are many and stunning.

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NEW: *Tuberous Begonias and How to Grow Them*,

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Jack Golding & Dieter C. Wasshausen, 2002, Smithsonian Institution, Volume 43: 1-289

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Continued on next page

ABS Bookstore continued from p. 156

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Westchester Begonia Society 55th Annual Begonia Show and Sale Saturday, July 19, 2014

The Westchester Branch of the American Begonia Society is proud to present its 55th Annual Begonia Show and Sale this coming summer on Saturday, July 19, 2014. The exciting Westchester event is the only judged begonia show in Southern California and will not only showcase begonias but ferns, orchids, bromeliads, aroids and other shade loving plants.

The Show Honoree for 2014 will be dedicated, long-time member Katsu Nakagawa – Her many years of diverse and ongoing contributions to the Southern California Branches of the ABS make this a well-deserved recognition for Ms. Nakagawa.

An excellent selection of rare and beautiful begonias - species & hybrids - and other plants and gifts will be available for purchase.

Admission is Free, and free parking is widely available. Always a Good Time, Everyone is Welcome!

Event: Westchester Begonia Society 55th Annual Begonia Show & Sale

Hours: 9:00 am - 4:00 pm

Place: Covenant Presbyterian Church, 6323 W. 80th Street (north-west corner of Sepulveda & 80th), Los Angeles, CA 90045

Contact: Martin E. Delgado, Show Chairman, (562) 310-8380,
mdlbrarian@consultant.com

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Treasurer... Carol Notaras, 2567 Green St., San Francisco, CA 94123; 415-931-4912; cnotaras@sbcglobal.net

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The Begonian September/October 2014

Deadline Date

→ July 28 ←

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