The Begonian

March/April 2012

B. 'Bonfire' Photo by Charles Henthorne

ISSN 0096-8684

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.

The Begonian is published bimonthly by the **American Begonia Society, Inc.** at Allen Press, P.O. Box 368, Lawrence, Kansas 66044-0368 USA. Views expressed are not necessarily those of the society, its officers, or the editor. Contents, except where labeled otherwise, may be reprinted without limitation, provided credit is given to "*The Begonian*, magazine of the American Begonia Society."

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San Francisco CA 94147-1651

Membership (subscription) $25, US, Mexico, and Canada. $45, Overseas airmail except Mexico and Canada. Added member, same household, no charge. Consult Membership Chairman for sustaining, benefactor, and life membership dues. U.S. currency only.
Back issues (current volume) $2.50.

Membership - Send inquiries about address changes, missing copies, dues, subscription, back issues and circulation to Membership Chair, Paul Rothstein 2 Flock Lane, Bella Vista, AR 72714. 479-855-1665 paroan2001@yahoo.com. Paypal accepted.

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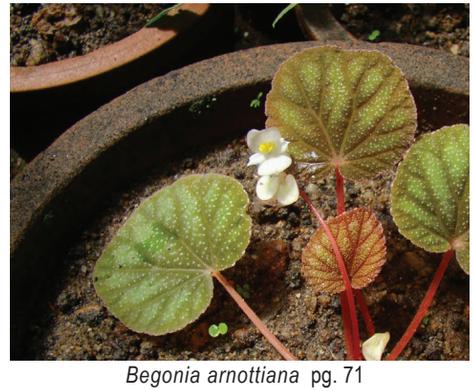

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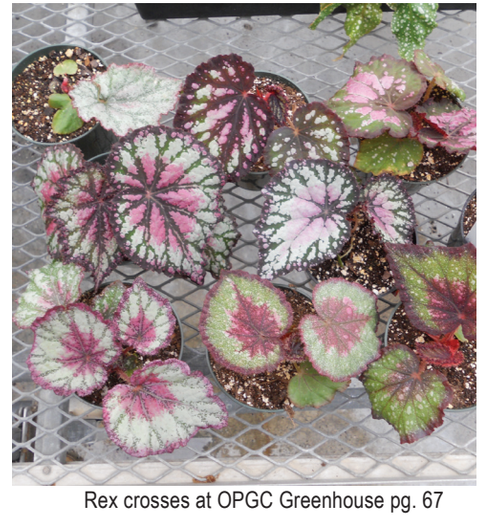

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Back cover: Begonia shoot proliferation in tissue culture at the Ornamental Plant Germplasm Center in Columbus Ohio. Article pg. 67

President's Message

Well, winter is almost over and here in Florida we have been very fortunate to have had a mild winter (yeah). As of this writing of the President's message I have had only one short freeze/frost period where I have had to bring my plants inside my enclosed porch. Once inside they will remain there until March when I begin taking my plants back outside. One plant in particular in my collection I want to mention is *B.* x *chungii*. This is a natural hybrid between *B. longifolia* and *B. palmata* var. *palmata* and was described by Dr. Rekha Morris in *The Begonian*. The reason I want to mention this plant is that the flowers are fragrant; not many begonias lend themselves to fragrance but this begonia certainly has a very attractive one, its also a very prolific bloomer and vigorous grower. This begonia definitely stands out among the begonias in my enclosed porch during their short winter stay and is one I hope everyone can acquire in their collection. This rambling of mine leads me to the importance of branch and membership support to our field collectors and researchers such as Dr. Rekha Morris, Dr. Mark Tebbitt, Hieu Nguyen, Scott Hoover, Jacky Duruisseau, Ross Bolwell and others and to the ABS Grant Review Committee. Your generous donations to the ABS Conservation Fund, and to these individuals, allow them to continue their important conservation and research of our favorite plant family. Remember that individual donations are tax deductible; branch/ individual donations should be made to ABS and sent to our ABS Treasurer

continued next page

B. 'Weltonensis'

I've had this plant (*B.* 'Weltonensis') for over 35 years. I am continually taking cuttings and restarting new plants. It is a favorite of mine and absolutely takes my breath away. This will take more sun (in eastern exposure) than you might think which deepens the leaf color. I do keep it in somewhat protected conditions. It likes my screen porch, which faces east during the summer. Also it does well in a sunny southern window in the winter. I have taken cuttings over the years to give to friends in an office environment and it has done well there also. This plant flowers much of the year.

Photo and information from Joanne Heide, Overland Park, KS.

Carol Notaras, be sure to earmark your donation to the Conservation Fund or for a particular recipient (i.e. Rekha Morris, Mark Tebbitt, etc…) By donations we can learn about and often acquire new and exciting begonias such as *B.* x *chungii*.

Early in March I will be participating in the Philadelphia International Flower Show. This flower show is the largest and oldest indoor flower show in the world and if any ABS members are in the Philadelphia area the first week of March I wholeheartedly recommend attending this fabulous show. Many ABS members participate in this event especially those of the Delaware Valley Branch. I also want to take this opportunity to extend my congratulations on the 10th anniversary of the inception of the Delaware Valley Branch. Remember this is the 80th anniversary of ABS as well. Let myself and your editor know of any highlights to your branch, we want to hear from you.

Good Begonia Growing
Charles Jaros, President

Correction

We have some awesome, diligent members and when a correction needs to be made we have the opportunity to learn from one another. Bill Claybaugh discovered an error and briefly explained to us the subtle differences between two very similar begonias. Bill writes:

> The beautiful begonia shown on the cover of the Jan-Feb 2012 Begonian is almost certainly *B. staudtii*, not *B. microsperma.* These two African species are almost exactly alike, except for two rather subtle differences, namely (1) *B. staudtii* has very small wings on the seed capsule and (2) fairly heavy "reddish" indument (hair) on the leaf petioles. These two items can both be clearly seen in the photo. *B. microsperma* does not have wings on its seed capsule and only very light green indumenta on its petioles. There is a more complete discussion of these two "look-alike" species in my article previously published in *The Begonian*, July-August 2006, page 147.

Begonia grandis: Worth Another Look

By John Boggan, Washington, DC

Begonia grandis Dryand. (syn. *B. evansiana, B. sinensis*), a tuberous species from China commonly known as the "hardy begonia", is one of the most widely-grown species in the genus and for good reason. Not only is this species the hardiest in the genus, it's also heat-tolerant. It's easy to grow, has handsome foliage, and blooms reliably with attractive pink or white flowers in the fall when few other perennials are blooming. The flowers are followed by dangling pink capsules that are attractive in their own right. It propagates easily (almost to a fault). Perhaps most tantalizingly, it can be crossed with many other species to produce interesting and attractive hybrids. But considering its hardiness and popularity, it seems to get short shrift in begonia publications. An exception is Mark Tebbitt's excellent 2005 book *"Begonias: cultivation, identification, and natural history"*, where he discusses this species in some depth. Perhaps *B. grandis* is simply too common and easy to get much respect, or perhaps most ABS members live in warmer regions where the flashier tropical species and hybrids can be grown outdoors. Let's face it: what *B. grandis* lacks is pizzazz. Some plants have darker green leaves, some lighter; some have pink flowers and some white. And that's about it.

Top: *B. grandis* 'Early Bird', my own hybrid of *B. grandis* subsp. *sinensis* 'Shaanxi White' x *B. grandis* subsp. *grandis* (pink form). This is basically a small-growing version of *B. grandis*, but blooms several weeks earlier than the common garden forms. **Center**: *B. grandis* subsp. *sinensis* 'Shaanxi White' (with *B. grandis* subsp. *grandis* in the same photo, showing the differences between them; note subsp. *grandis* is not yet in bloom). Photos by John Boggan
Bottom: *B. grandis* 'Nanjiang Silver' grown by Paul Tsamstis
Photo by Laurie Bounsall

Two things may change that. First, there have been several new selections of *B. grandis* introduced in recent years—in particular some wild collections from China—that expand its somewhat limited palette. Second, there have been new collections of several Asian species that have some degree of hardiness and have the potential to cross with *B. grandis* to produce relatively hardy hybrids in a much wider range of foliage forms and colors.

Subspecies

Begonia grandis is the most widely distributed and most northerly-occurring Begonia species in China, where it is moderately variable in the wild. Three subspecies are currently recognized, although they are not very well-defined. *B. grandis* subsp. *grandis* is the most common—and was for many years the only—subspecies in cultivation, and by some accounts is known only from cultivated plants originally introduced from Japan. This subspecies has been known as *B. evansiana* and *B. grandis* ssp. *evansiana*, and is still often found under these names. The plants are robust and large-growing, with the leaf undersides solid red or flushed pink. *B. grandis* subsp. *sinensis* consists of smaller-growing plants that usually have leaves with pale green undersides. This is the subspecies most commonly found in the wild in China, and is sometimes grown under the name *B. sinensis*. *Begonia grandis* subsp. *holostyla* is distinguished primarily by rather obscure characters of the male and female sex parts. Its geographic range overlaps with that of subsp. *sinensis* and my own opinion is that the subspecies is entirely without merit; F2 hybrids I grew from a cross between the first two subspecies varied in the characters that supposedly define this one.

Cultivars

Begonia grandis subsp. *grandis* has long been known by only two selections, the typical pink-flowered form and a selection with white-flowers sometimes called 'Alba' or "var. alba". In recent years several new cultivars have been introduced, both as wild collections and as selections of plants already in cultivation. Among these are 'Heron's Pirouette', 'Wildwood Purity', 'Wildwood Premier', 'Claret Jug', 'Sapporo', 'Red Undies', 'Wolong Rose', and 'Early Bird'. Most of these seem to be distinguished by rather subtle differences in plant and leaf size, leaf coloration, and timing of bloom. 'Shaanxi White' is a somewhat different wild collection from Shaanxi Province introduced through Plant Delights Nursery (as *B. sinensis*). It is a small-growing plant with plain green leaves and white flowers but I didn't find it terribly vigorous. One of the most distinctive and promising introductions is 'Nanjiang Silver', discovered in Sichuan Province by Dave Demers of Cyan Horticulture and introduced to cultivation by horticulturist Riz Reyes. 'Nanjiang Silver' has pink flowers and dark leaves

with silver speckles. Whereas *B. grandis* subsp. *grandis* tends to bloom in early fall, some of the wild collections like 'Heron's Pirouette', 'Shaanxi White', and 'Nanjiang Silver' begin to bloom much earlier.

Culture and Propagation

Begonia grandis is reliably hardy to zone 6, and probably colder regions if given some protection or a sheltered location. Despite its hardiness *B. grandis* is a notoriously late riser in the garden, but once it starts growing is quite vigorous. It is a classic "pass-along" plant as it is easy to grow and propagate, and transplants easily from one garden to another. The plant grows best in rich, moist, well-drained soil in bright shade. Established plants are somewhat drought-tolerant but will always look better with constant moisture. Direct mid-day sun will bleach or scorch the leaves but early morning or late-day sun will cause no harm as long as the plants get enough water. In the fall the plants produce small aerial bulbils, which drop to the ground and grow into new plants the following year. Because of this it self-propagates readily in the garden to form a steadily-growing clump. In fact I find it rather weedy and suggest removing most of the little plantlets that pop up; otherwise the clump will become too crowded and may overwhelm surrounding plants. To transplant or share one need only dig up a plant or clump with a bit of soil around the tubers.

Begonia grandis is self-fertile and regularly produces seed capsules, which usually mature before the first frost. It is exceedingly easy to propagate from seed, although I have never found self-sown seedlings in my own garden. The seedlings are beautifully patterned with silver speckles but in all but 'Nanjiang Silver' lose these silver markings as the plants mature. I have never attempted to propagate from stem or leaf cuttings because propagation is so easy from bulbils and the plants will bloom in their first growing season. *B. grandis* is also easy to grow indoors and the bulbils allow out-of-season bloom; simply refrigerate them in moist potting mix for several weeks, then plant in pots for bloom in spring or early summer, although they will not reach full size in their first growing season. Because of its requirement for a cold winter rest *B. grandis* is not suitable for warmer climates, where it tends to overwinter poorly or not at all but can be kept going by overwintering the tubers or bulbils in the refrigerator. Plants grown indoors are prone to mildew and mites, but outdoors I have found it remarkably trouble-free.

Future Prospects

Begonia grandis is most closely related to the Asian species in sections *Diploclinium* and *Platycentrum* and will cross easily with most of the species of these sections. Many such crosses have already been made, but almost entirely with tender species. In the 1800's *B. grandis* was crossed extensively with *B. rex* and rex hybrids; the resulting plants had beautiful foliage but there is little information on their hardiness. One of these, 'Abel Carriere', is still in cultivation although it has never been reported as hardy. But with the introduction of many new species—particularly from China—that are proving to have some degree of hardiness, prospects for hardy hybrids are better than ever before and *B. grandis* should be crossed with any and every species and hybrid that has demonstrated even slight cold hardiness. It makes an excellent seed parent, in part because it's so easy to grow and bloom and in part because the capsules ripen quickly. Plants can be grown indoors from pre-chilled bulbils to get off-season bloom to cross with other begonias that may not bloom in the fall. 'Nanjiang Silver', in particular, introduces the possibility of hybrids with more attractively patterned leaves.

Begonia grandis is not closely related to the South American tuberous species from which the xtuberhybrida group is derived. It has been crossed with some of these species and hybrids, but the resulting hybrids are reported to be weak and I don't know of any that have persisted in cultivation. Unlike those species and hybrids *B. grandis* is heat-tolerant, which suggests possibilities in a large part of the country where conventional tuberous begonias (xtuberhybrida) perform poorly.

Opposite page: *B. grandis* subsp. *grandis*, both pink & white forms. **Above**: *B. grandis* seedlings, showing the silver speckling that they lose with maturity **Below**: Hybrid seedlings from my own cross of *B. grandis* x *B. sizemoreae*; hardiness untested but they suggest the potential of *B. grandis* for producing hybrids with nice foliage. Photos by John Boggan

Pruning Begonias

Peter Sharp, Sydney, Australia

I find that many growers are somewhat hesitant to use the secateurs, possibly not realizing the benefits of doing so when necessary. I well remember a talk by one of our foremost growers and hybridists, Lyla Kilpatrick from Western Australia, who posed the question 'are you frightened of pruning?' and her advice was: 'Shut your eyes and cut – you'll soon get used to it', or words to that effect. She was so right in stressing the benefits of pruning and I have heeded her advice ever since, hardened my heart and cut into my precious begonias, seldom to be disappointed. So, if you want your begonias to look their best then most of them need to be pruned.

If uncertain - CUT!

In the early stages of growth, the shrub-likes and the semperflorens (and only these) need regular tip pruning to encourage the bushy growth so desirable.

Advanced plants of the cane-like, shrub-like, semperflorens and trailing/scandent groups need to be kept to a desirable shape and size and such trimming as is necessary can be done at almost any time throughout the growing season, however annual pruning is also needed as discussed below.

The cane-likes need an annual prune so that they will remain the height that you want whilst not growing into leggy and somewhat unsightly plants. Do this in late winter – they will tell you when by starting to put on new growth from the buds, which have formed at the nodes. Firstly, in advanced plants remove totally the old, brown canes from the centre of the plant: new canes will grow from the root system on the outside of the plant. Next, decide what size you want your plant to be then cut accordingly – reducing by a third or more will do no harm. Cut just above an outward facing node so that the new growth will be on the outside of the plant. Try not to make all your cuts at the same height – some should be low so that the plant will leaf up for the whole of its height. Your cane-likes will develop one (seldom more) new cane from the topmost node. Use the cuttings to propagated new plants. *B. luxurians,* classified strangely as a shrub-like, responds in the same way to pruning as the cane-likes.

The shrubs look their best when early pruning produces that very desirable bushy shape, dense foliage from top to bottom providing a beautiful background for the eventual flowering. Most of the shrub-likes will accept quite heavy pruning but I have found that *B. sanguinea* will take years to recover from this, and just light trimming, if at all, is the way to go here. It is best, I find, to prune throughout their growing season, except of course when buds have set and flowers appear.

The rhizomes need pruning too. Remove the growing tips of the ground-hugging ones to keep the plant within bounds. This will encourage the growth of lateral rhizomes, thus producing much fuller plants. Do this after flowering, then at the end of winter remove all the old leaves to allow room for the new foliage and the flowers to follow. Again, use the rhizome tips to propagate new plants. The erect growing rhizomes need to be cut back hard each year, usually towards the end of winter, and the tips thus removed used for propagation. In the Botanic Gardens in Sydney we re-propagate these upright rhizomes and replace them each year, often striking the tips direct in the garden.

The thick-stemmed begonias are an odd lot and I'm rather fond of them. They mostly grow tall with bare stems and the trick here is to prune quite hard, using the tips to propagate new ones and we find that a number planted close together produce a good display. Usually just one new stem will develop from the topmost node. Nature's way of reproduction, apart from seed, is that the tall bare stems eventually collapse, and where they touch the soil they very quickly root and produce a new plant, whilst new growth appears from the original root. Natural layering.

The trailing/scandent begonias also benefit from thoughtful pruning. If the long trailers grow to look unsightly then prune them back to a better length, usually after flowering or a little later. Main purpose here is to keep the plant looking good. Removing completely old trailers will encourage new growth.

Always use a good pair of by-pass secateurs for pruning, making sure that they are sharp and are strerilised before use, and repeat this between plants if you are at all uncertain as to the health of the plants you are working with. Pruning is one sure way to spread disease if present. My pruning mantra is: *"If uncertain, cut."*

B. U560 with cloche cover removed

Begonia U560

Article and photos by Johanna Zinn
Conservation Chairman

At the 2008 Houston Convention, I was given a small begonia plant identified only by its Lita, Ecuador collection site. Several months later, Mary Bucholtz and Charles Jaros, Co-Directors of the ABS Unidentified Species Program, assigned the plant the Unidentified Species Number 560.

B. U560 is a small-leaved plant that will creep along its growing medium, hang over the edge of the pot, or climb up a tree or rock, putting out roots at most of the nodes along the slender, light cranberry-red stem. It is most likely in the Section Gobenia which includes species from the northern Andes.

Some of the mature leaves on my plant of *B.* U560 (see photo on front cover) are symmetrical, or nearly so, and some are asymmetrical. The leaves have acute apices [leaf tips] and slightly overlapping cordate [heart shaped] bases. They have a few scattered white hairs on the upper surface of each leaf which are located mostly on or near the slightly undulating toothed margins. New leaves are yellow-green to medium green and mature to dark green with light red backs. Mature leaves can be 2.25 inches [5.7cm] long and 1.25 inches [3.3 cm] wide, but the majority of the leaves on my plants are much smaller. The leaves might be larger if the plant were growing in soil instead of moss, and if it were fertilized more often.

Many of the 1 mm wide stems on my plant are 12 to 14 inches [30.5 to 35.6cm] long with the longest growing to 24 inches [61 cm]. Because the stems root at the nodes as they grow, stems in *B.* U560's native habitat might grow longer.

Finding the right location and container for *B.* U560 can be a challenge. It demands very high humidity in my growing areas. Even if the plant is in a terrarium, if the moss dries or the humidity decreases in the container, even slightly, the plant will wilt, and may not recover after watering. Unlike most begonias, this plant does well in a constantly moist medium. I grow this begonia wetter than any other begonia; many of the leaves have water dripping from them for several days after being watered or from condensation. I am currently growing *B.* U560 in uncut sphagnum moss secured with fishing line to a piece of wood. The piece of wood is sitting in a large plastic saucer on a layer of moistened sphagnum, and is covered with a large cloche. Growth is better during the cooler months.

My plant has not bloomed.

Originally, I grew *B.* U560 under fluorescent lights, but the leaves became very pale. The terrarium is now placed about three feet from fluorescent lights, and the color of the leaves is much darker. It might grow well in a bright north-facing window, but I have not tried to do so because I am hoping that the extra light in its current location will stimulate it to bloom. Five or six times a year, I pour a ¼ strength dilution of a balanced house plant fertilizer over the leaves and on the moss.

Propagate stem cuttings by placing them in cut, moist sphagnum moss in a covered container. Pinning stem cuttings to the surface of cut sphagnum with hair pins also works well.

Snails have been the only pests to infest *B.* U560. The snails often crawl on the moist sides of the cloche where they can easily be seen and removed. As a precaution, I wash the cloche every few weeks to remove any snails too small to be seen. When snails were present, I put Sluggo or Escar-go, both iron phosphate based slug and snail baits, into bottle caps that were placed on the moss. Both baits are meant to be sprinkled on moist garden soil, but both quickly grow moldy in a terrarium environment. The moldy bait is easier to remove if it is contained in the bottle caps.

B. U560 leaves

While searching for information on *B.* U560, I asked members of the Begonia Yahoo Group if any of them had grown or recognized this begonia. The next paragraph contains condensed comments from Elizabeth Mateus.

"I collected a piece of that plant near Lita, in 1991. At the time, Lita was just at the end of a mountain railway, which was no longer being used to carry tourists, as the frequent mudslides made it too dangerous. We rode it to Lita anyway, then took a small bus about half an hour into the jungle on a dirt road. I found that little begonia growing up a rotted tree stump in a cleared area. I only took a small piece of rotted wood with about 6 inches of the begonia growing on it, and left the rest. It wasn't flowering. It was in full sun, but as you know, full sun there is not as intense. I think we were at around 3,000 ft. Nighttime temps were very cold. It had to be in the 40s-50s. It's such a delicate little thing. It didn't survive the trip, because we had another week of traveling and collecting to do. It turned to mush with the heat and handling, so I'm delighted that someone else discovered it and brought it back. From what I understand, much of the area where we were in 1991 has sadly been cleared."

Another member of the Yahoo Group, Ludovic Kollmann, tentatively identified the plant as *B. maurandiae*, but he cannot positively identify the plant until he can examine blooms from the plant.

I appreciate Elizabeth and Ludovic's comments on *B.* U560. If anyone has any photos of blooms or other information on this lovely begonia, please send them to our editor so that she can print follow-up comments to this article.

A Word with You: Pop Quiz!

By Claudia Goodridge, New Haven, CT

Botanispeak has been my subject for the last two years; this started in January/February 2010 – I can't believe it either. Lots of vocabulary has been presented; lots more remains. But, here it is … the pop quiz I promised. Do your best to match each vocabulary word on the left with a lettered word or phrase. (Note that matches may not both be the same parts of speech.)

___peltate	a. egg
___pinnate	b. on the same plant
___ovate	c. on the bark
___palmate	d. wavy
___orbicular	e. rounded tooth
___epiphytic	f. shield-like
___epilithic	g. on separate plants
___rupestral	h. connector
___crenate	i. on the rocks
___serrate	j. female
___dentate	k. smooth
___undulate	l. circle
___crispate	m. hand
___cleft	n. feather-like
___compound	o. curly
___pistillate	p. hair
___stamenate	q. saw
___monoecious	r. multiple
___dioecious	s. among the rocks
___style	t. tooth
___indumentum	u. male
___glabrous	v. cut

Answers in the May/June 2012 issue.

Travel to Gabon

2010 May 24 / 2010 June 14

Part 1

Article & photos by Jacky Duruisseau Bois France

Monday May 24

On our second trip to Gabon, where we went in 2003, the goal is looking for begonias, of course, but especially to bring back seeds as well! We received donations from the ABS Grants Committee, Japan Begonia Society, Queensland Begonia Society and AFABEGO and we must find seeds of … yellow flowers, of course!

We land early at Libreville to find again the equatorial atmosphere: warm and humid! I like that… At 5 am, the Tropicana, the hostel where we will stay, is closed! The night watchman looks and he doesn't have a reservation for us! So, yes, we are in Africa! We finish sleeping under a straw hut and breakfast comes about 7 am. At 11am, we can take our bags up to our room. We devote the day to resting and walking along the beach.

Tuesday May 25

We pass this day in preparation for the expedition and to do some last minute shopping with André, the Tropicana taxi driver. In Libreville, the traffic is dense and the air pollution is intense! We find again Patrice Pasquier, our contact in Libreville. Thanks to him, we get entrance authorization to Crystal Mountains Park and the possibility of having accommodation and meals at the SEEG (Water and Energy Society of Gabon) in Kinguélé and Tchimbélé. We go to Oloumi, where there is an Avis agent who rents cars. Many negotiations over several months, but we still don't know if we'll have a 4x4! All right! We have one. No driver, because certified drivers drive 8 hours a day and they don't want to sleep in the bush, in villages, or in a hammock! OK, no problem, we will be alone, Colette and I, totally autonomous, and we'll just improvise according to places and events.

Wednesday May 26

Let's go! We fill a jerrycan with reserve gasoline. We drive through Libreville suburbs. In 1970, when I lived here, the Libreville suburbs were a large village scattered as an enclosure of one kilometer size around Libreville. Now it is a huge shantytown of about

Opposite page: Asok track (photo 1)
Above: Bivouac (photo 2)

Top: Exploration of a river (photo 3)
Bottom: *B auriculata* (photo 5)
Opposite page: Our bathroom... (photo 6)

ten kilometers size! How sad! Going on towards the Crystal Mountains we can see, over there, in the mist Ntoum, Kougouleu, where we leave the paved highway through an entry gate with a rather relaxed policeman. We go north to Mela, Song, Nkan, Asok (photo 1), with nearly deserted villages, and only a few houses. It's impossible to get a guide to take us to the places we are looking for and that I have information about. Half-turn to Nzoregon and bivouac in the 4x4 on the roadside (photo 2), near a small stream. The night falls about 6.30 pm. Nobody! We are alone for kilometers around. No traffic! In the forest that sings, night is magic…

Thursday May 27

Let's get to work! Weather is fine. Without a guide, we improvise and begin exploring the streams along the Asok road, towards Mela and Nkan. We are on the west edge of the Crystal Mountains. We paddle (photo 3) and it is not easy - mossy and slippery rocks, trunks crosswise in the river! But this area is very rich and we find many, many begonias, the ones we found in 2003: *B. lacunosa, B. susaniae, B. clypeifolia* (photo 4, see pg. 43), *B. hirsutula, B. fusialata, B. auriculata* (photo 5); on the other hand, among the sections Loasibegonia and Scutobegonia, few have blossomed and we find few fruits! Often only immature ones or without fruit! It seems these plants use vegetative propagation (we can see many leaves on the ground with starts and roots) rather than sexual reproduction. We collect seeds on *B. fusialata* and *B. auriculata* (photo 5). Again a bivouac in the 4x4. No mosquitoes, but we put mosquito net over the open windows of the car just in case.

Friday May 28

The sky is grey today. It is often the same in the morning, then the fog lifts about 11 am. We go on with the exploration of streams we find towards the south. Still many begonias, but no new species. We bathe in the river (photo 6) where the water is clear and fresh and how great it feels after sweating for days! Here, we have high humidity and sweat doesn't evaporate. So we stay sweaty all the day… We take the Kinguélé road at midday, due east towards the Crystal Mountains. We visit some rivers before Kinguélé, tributaries of the Mbei River, where there are the Kinguélé and Tchimbélé dams. Some difficult bogs and we bivouac to rest. A Charaxes butterfly has a slap-up meal…of dung! Many parrots go to bed loudly. Where are they coming from? Where are they going? What are they talking about?

Saturday May 29

The parrots are back in the morning and they start up again. We arrive at Kinguélé and go to the Sodexo which runs accommodations and a canteen for the staff of the dam. We produce passports to the policemen who have entrance authorization papers to the Park. We can read on it that Gabriel Ngoua will be our guide in the Park. The chief tells us: "Gabriel Ngoua? I don't know this Gabriel Ngoua. He's not here! You'll have to sort it out for yourself!" No problem… we'll go where we want and we'll do as we like! But we would like to get a guide in Kinguélé for driving us to Mont Bilam where *B. asplenifolia* grows! No villagers in Kinguélé! Only policemen

Above: The Crystal Mountains near Kinguélé (photo 8)
Bottom: *B. erectotricha* (photo 7)

and the people who work the dam. Nobody knows where Mont Bilam is! We have a GPS but we use it for coming back, not for going because I don't know our present position. We set up at the house (used before by engineers who built the dam) and we choose the bedroom where the air conditioner is less noisy! In the afternoon we explore the banks of the Mbei river. Downstream from the bridge are many many begonias and new ones for us: ***B. heterochroma*** with dark leaves and ***B. erectotricha*** in blossom (photo 7). According to Marc Sosef, this species is very rare. Unfortunately, few flowers and few fruits, but incredible quantities of begonias. We finish the day visiting another river, Mbei tributary, above Kinguélé, on the Tchimbélé road (photo 8). Another interesting area where we again find ***B. erectotricha***. We have a meal at the canteen with nice dam people…and a real bed for the night with an air conditioner that drowns the sound of heavy night rain!

To be continued in next issue…

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 drown menu at the bottom of the page as with the shipping and handling drop drown 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,
Dean Turney, 467 Fulvia Street,
Encinitas, CA 92024.

E-address: dean @deansmail.us

New Seeds from Dot and Barry Mann
B. digyna (limited $3.00 per pkt)
B. koksunii (limited $3.00 per pkt)
B. moysesii (limited $3.00 per pkt)
B. (mixed rex) ($2.00 per pkt)

New Seeds from Joan Campbell
B. schmidtiana (rare $3.00 per pkt)

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; 3**7-48 **(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 Washausen. Hybrid names are made consistent with the *ABS Check List of Begonia Hybrids* edited by Howard Berg dated 9/13/2005.

B. shilendrii R. Morris & P. D. McMillan

A new begonia species from Arunachal Pradesh, India

Article & photos by Dr. Rekha Morris, Pendleton, SC

On my first visit to Arunachal Pradesh in the NE Himalayas of India in early April 2005, I began documenting begonia species, which had last been systematically documented and described by C. B. Clarke in 1879 in the Flora of British India. I little expected to document some 30 securely identified and almost as many as yet unidentified species in Arunachal from 2005 to 2010. Among the many unidentified species, the first one I saw I registered as B. U523 with the American Begonia Society, and it is this species which is introduced here as a new species for India, and named B. shilendrii to honor the memory of His Excellency S. K. Singh, the late Governor of Arunachal, 2004-2007, without whose support and help I would not have been able to explore and document begonias in Arunachal Pradesh.

In the process of exploring the many gorges in the environs of Itanagar, the capital of Arunachal in Papumpare District, I found myself standing on the high bank of a stream and wondering whether it was worth my while to wade across it and expose myself to the hungry leeches which had begun to appear by the droves as the rainy season commenced. From where I stood the banks were covered in ferns interspersed with the gigantic foliage of what I later identified as *Tacca integrifolia*. There was no sign of any begonia foliage, but my experiences in the Eastern Sierra Madre Mountains of Mexico had amply indicated that it was along such streams and stream banks that begonias tended to flourish.

I reluctantly rolled up my jeans, and taking a couple of quick, long leaps crossed the stream at its narrowest point. Although I saw no begonia flowers or foliage, I caught a glimpse of a broken stalk of dry capsules caught among the ferns, which turned out to be begonia capsules. This initiated a careful scrutiny of the stream bank so densely covered in ferns that I almost missed the begonia leaves which were so

Left: The stream bank habitat of *B. shilendrii* where I first saw the plant. **Top**: Male flowers and capsules. One of the unusual features of this species is the form of the stamens of the male flowers.
Bottom: *B. shilendrii* growing on cliff side.

Charcoal drawings of *B.* U523
By Marilyn Golding White

deeply incised that they were all but totally camouflaged among the ferns.

Although I recorded some dozen or so mature plants of *B.* U523, there were none with flowers and/or capsules. The broken stalk of capsules I first picked out from among the ferns was the only one I found on this trip. This is the reason why the holotype includes a leaf and capsules and no flowers.

On subsequent trips to Arunachal between 2006 and 2010, I assiduously searched gorges and stream banks from West Kameng to Anjaw on the eastern edge of Arunachal for *B.* U523 with very little success. With the exception of a single steep water runoff channel in Lower Subansiri, and another gorge with a stream flowing through it in Papumpare District I have been unable to document this species at any other site in Arunachal Pradesh.

In all these three locations *B.* U523, now *B. shilendrii,* flourishes in considerable shade with dappled light reaching the slopes where it thrives for a few hours around mid-day. Two of these three locations are above a small stream, which retain some water even in the drier winter months providing constant ambient moisture. The third location is a gulley, which appears to receive so much run-off water that its sides are damp throughout the drier season when it is probably also the recipient of some underground seepage.

The small rhizomes of *B. shilendrii* are either just below a layer of moss or a superficial layer of debris, and anchor themselves on the steep banks by the thin fibrous roots which spread as much as 20-24" along the rock surfaces. The flowering season for *B. shilendrii* is from approximately the second half of December and well into January, and the male flowers are the first to appear on this monoecious species. The flowers range from being almost white or a pale lavender-pink to a much deeper rosy pink, which are held in tall panicles well above the foliage.

Although *B. shilendrii* thrives in the moist atmosphere favored by most begonia species I have encountered in Arunachal, they are generally in such deep shade that it is only occasionally that I have documented another begonia species within its vicinity. *B. aborensis* is most frequently encountered as a companion to *B. shilendrii*, but it manages to anchor itself where it receives far more light then the muted ambiance favored by *B. shilendrii.* Since *B. burkillii* is flourishing by the thousands along the gently rolling ridges of E. Siang I have been surprised to document the few plants, which I have in these western districts of Arunachal almost invariably growing within 50 – 100 feet of *B. shilendrii* at both the sites in Papumpare district where I have documented the latter. *B griffithiana*, a species which thrives in near

full sunlight in eastern Arunachal, is a surprising species to encounter within a hundred or so yards of *B. shilendrii*'s habitat in Lower Subansiri and in one of the gorges of Papumpare district.

One of the more interesting aspects of the extremely moist habitat [approximately 800 to 2000'] of *B. shilendrii* is that along with several species of ferns, among them several rare and threatened species such as tree ferns, there are invariably a stand of *Tacca integrifolia*. The eerily magnificent blooms and gigantic strap shaped foliage of this Tacca species provide an oddly striking counterpoint to the ethereal delicacy of the flowers and fern-like foliage of *B. shilendrii**.

*This species has been misidentified as *B. lacinata* in the herbarium of the Botanical Survey of India in Itanagar, Arunachal Pradesh.

RM

R-1 holotype On a steep bank above stream in environs of Itangar, Rekha Morris AR-1, 3 April 2005 (CLEMS). Additional specimens (topotypes): Same location. Rekha Morris AR-1A, 3 April 2005 (CLEMS); In deep shade on steep bank in hills towards Dimn. Lower Subansiri District, 8 April 2005 (CLEMS); Near vertical cliffs above stream in vicinity of Itangar, approximately 1500 feet elevation, Rekha Morris AR-108, 17 December 2005 (CLEMS); Same location, Rekha Morris AR-109, 17 December 2005 (CLEMS); Same location, Rekha Morris AR-110, 17 December 2005 (CLEMS); Same location, Rekha Morris AR-111, 17 December 2005 (CLEMS).

AR-725 & AR-723 both with good flowers which serve to illustrate both male and female flowers.

Top: *Tacca integrifolia,* one of the plants that shares *B. shilendrii*'s habitat. **Center**: Rhizomes and juvenile leaves.

Perennial acaulous, rhizomatous herb, rhizomes produced at or just below the surface, horizontal, unbranched, elongate, 4 – 20 mm thick. Leaves produced 5 – 25 mm apart on rhizome. Petiole appearing terete, 4.0 – 5 cm long, 2 – 5 mm wide, covered with rusty, villous indument which is often dense when young and thins with age, the individual, shaggy trichomes 2 – 7 mm long, straight to curled when fresh, often twisted and curled when dry. Blades slightly to noticeably oblique with mid-rib often at 15 – 60 degree angle from point of petiole attachment. Blades ovate to broadly ovate in outline, deeply pinnately incised ½ to ¾ of the way to the midrib, primary lobes 5 – 10 on mature leaves; 18 – 35 cm long and 8 – 29 cm wide, 1.2 – 2.4 times as long as wide. Midrib of abaxial side of blade with modest to dense covering of rusty villous trichomes identical to those of the petioles, the intervening areas and adaxial surface smooth, margin of blade smooth. Inflorescence paniculate exceeding the leaves at maturity. Peduncle 10 – 29 cm below the first flower with the flowering portion extending another 10 – 20 cm at maturity. The branches of the inflorescence dichotomously or alternately branched,

Detail of male flowers of *B. shilendrii*

occasionally alternate-second, (perhaps second only when leaning over). Male flowers held on extremely thin pedicels, 5 – 15 mm long, less than 1.0 mm wide even when fresh, even more capillary when dry and extremely fragile. Male flowers with two tepals, each tepal cordate-ovate 5.0 – 10 mm long and 4.0 – 6.0 mm wide, clear pale pink to vibrant rose pink. Stamens numerous, 30 – 40, distinctive by being connivent by their filaments for 1 – 3 mm (when fresh). Female flowers held on extremely thin pedicels 10 – 35 mm long, less than 1 mm wide. Female flowers with two tepals, broadly ovate, 5.0 – 10 mm long and 4.5 – 8.9 mm wide. Stigmas (2 – 3) bilamellate and twisted. Capsules two, occasionally three-carpellate, with broadly-elliptic shaped body, 3-winged, the upper wing dramatically larger, the two lower wings 0.3 – 1.5 mm wide, the upper broadly-triangular and 1.5 – 2.0 cm long and 10 – 14 mm wide at base.

Distinguished by the unique leaf and the connivent stamen. ***PDM***

ACKNOWLEDGMENTS

It gives me great pleasure to finally name a begonia species for His Excellency S. K. Singh, the late Governor of Arunachal Pradesh, 2004-2007 without whose help I would not have been able to travel and document species begonias in this area of highly restricted travel by Indians and non-Indians alike. I would also like to take this opportunity to thank Dr. Patrick McMillan, who as the current Director of the South Carolina Botanical Garden, and host of the highly acclaimed television nature series, Expeditions McMillan, aired weekly on PBS under the sponsorship of Clemson University, has nevertheless found time to describe this unusual species.

It is a species, which resembles no other so far recorded for India, and its uniqueness within the greater circle of Asian species can receive no better accolade then the comment [quoted below] by Dr. Ching-I Peng, a recognized authority on Chinese species who has also worked extensively with the begonias of S. E. Asia:

"There are species in China (such as) with deeply dissected foliage like that of *B. shilendrii*, but the inflorescence and flowers are completely different. *B. shilendrii* is a very unusual plant to me!"

I regret that Jack Golding is no longer with us at the naming of the first begonia species from India by me. However, his continuing connection with my work with begonias continues in the friendship of his daughter, Marilyn White, who has generously contributed admirable drawings of this species, one of which is included among the illustrations in this article.

I regret also that I am unable to assign *B. shilendrii* to a section, however, preliminary work to do so has been initiated by Bill Claybaugh. Despite his concern for and care of his ailing wife, Marion, Bill has generously contributed his time and expertise to research and suggest that *B. shilendrii* appears to fit best in Section Petermannia.

My thanks go also to the ABS & the AABS, their branches from San Francisco to Sydney [Australia], and the many individual members who have supported, encouraged and appreciated my work with the begonias of India in too many ways to enumerate here.

Thank you all with my best wishes for a safe and happy 2012.

Time to Celebrate in 2012

By Bernie Wiener, Havertown, PA

So many memorable occasions: Delaware Valley Branch of the American Begonia Society is 10 years old; American Begonia Society is going into its eightieth year; and I, myself, expect to celebrate my 90th birthday. Back in 1988 I tried to start a local begonia branch. After a year of struggling, it was clear that it was not to be. Since I was a volunteer at the Horticulture Center, which consisted of 5 greenhouses, my next project was to start a chapter of Hobby Greenhouse Association and to hold our meetings at the beautiful Horticulture Center.

Time went by and in 2001 the Pennsylvania Horticulture Society held a meeting on growing begonias at the Meadowbrook Farm (the Liddon Pennock estate in Huntingdon Valley, PA with its unusual topiaries, shrubs, and great greenhouse begonia collection). A very large group of begonia growers attended this meeting and thus emerged the inspiration once again to start a begonia branch. On February 17, 2001 an organizational meeting was held where there were 21 attendees and we held together till the ABS board met on February 23, 2002 and granted us a charter.

As I wrote in a previous article in The Begonian (March/April P 50), DVB/ABS is fortunate in having such helpful members. During the eighty years that ABS has been in existence, there are branches who have celebrated many more than ten year anniversaries but our eastern area has never before supported a begonia branch. A group of begonia growers tried to start a branch in 1970 but it never developed. Our famous Philadelphia Flower Show always has different classes for begonia growers to enter their specimen plants, but usually these growers belong to other plant societies and have no time or interest in being active with DVB/ABS.

Our branch was fortunate to have had Mark Tebbitt as a speaker to discuss his book when it came out. I suggest you mark on your calendar another special meeting on April 7th when John Boggan will be our speaker on new varieties of hardy begonias. The members of the Yahoo Begonia Group are well acquainted with John's contribution on researching the Chinese hardy begonias and how he is experimenting with different begonias right on his property. Our meeting will be held in a large auditorium at The Huntingdon Valley Library so I am starting early with publicity hoping to give John a room fill of interested ABS members.

Happy Anniversary American Begonia Society!

Top: *B. chitoensis* and *B.* 'Metallic Mist', which is a Dan Heim's hybrid of *B. pedatifida* x *B. taliensis*, that are two fairly hardy Chinese species. It has survived 4 winters for me with only a light mulch for protection. **Bottom**: *B.* 'Little Brother Montgomery'. Information and photos from John Boggan. John will speak on begonia hardiness at the DVS 10th Anniversary.

ABS Convention 2012

San Diego Local 9580

Celebrating Our Local Legends

August 8 - 12, 2012

Town and Country Resort

Scheduled to date:

We are planning legendary tours of the Alfred D. Robinson Estate, Kartuz Greenhouses, A and G Nursery (formerly Ades and Gish), KOLZ Begonia Research Center, the home of Chuck Ades, the home of Dean Turney and other stops still in the works. We will have seminars featuring recent begonia excursions by our legendary explorers. Plus legendary San Diego weather can be at its best this time of year. More information will follow as we finalize our schedule. Registration packets will be mailed in April. Save the dates come early and/or stay longer!

Begonias at the Ornamental Plant Germplasm Center

By Steven Haba-Greenhouse Coordinator, OPGC, Author & Pablo Jourdan-Director, OPGC, CoAuthor
Columbus, Ohio

Begonias rule at the Ornamental Plant Germplasm Center (OPGC)! Well, not quite rule, but they certainly are a very important area of activity for this center that is part of the National Plant Germplasm System of the US Department of Agriculture.

The OPGC is located in Columbus, Ohio, on the main campus of The Ohio State University; its mission is to conserve genetically-diverse begonias and associated information, conduct germplasm-related research with begonias, and encourage the use of begonia germplasm and associated information for research, crop improvement and product development. In addition to begonia work, the center also has an active program with five other priority genera: Coreopsis, Lilium, Phlox, Rudbeckia and Viola, but maintains a collection of over 3500 samples representing 180 genera of herbaceous ornamental plants.

One of us (Steven Haba) would argue that although most of the plants in our collections are great, begonias are the coolest, most bizarre, and most fascinating of the ornamental plants; so much so that a Master's degree is in the works to study important germplasm aspects of these plants. Our begonia collection currently includes 130 different accessions, selected to provide a broad genetic representation of the genus, but this is a continuously evolving and developing collection. Because the genus is so large, it is unrealistic for us to have a comprehensive collection of all begonia species and cultivars. We are developing an emphasis on a thorough representation of species and at the same time, a focus on those species that have contributed to the development of the most economically important, complex hybrid groups such as Semperflorens-cultorum, Tuberous, and Rex-cultorum.

The collection is maintained primarily as plants, clonally propagated on a regular basis. One of our goals is to conserve as many of the begonia species as seed and to develop techniques for a very thorough study of seed biology including overall quality, germination, vigor, and longevity in storage. For example, at present we do not know how long begonia seeds will remain viable in storage either in cool, dry conditions (40°F, 25% relative humidity) or in a freezer. We would like to explore whether begonia seeds can be kept in 'suspended animation' – in liquid nitro-

Above: Front garden of OPGC
Photo by Pablo Jourdan

Begonia solananthera seeds under microscope
Photo by Pablo Jourdan

gen – at temperatures (negative 346°F!) where biological function nearly stops. This 'cryo-preservation' is standard practice for some germplasm material.

It is fascinating to think that from some tiny, miniscule seeds can develop some "wonky" dinosaur-like plants! These tiny seeds make it a challenge to do some important research on seed biology. We would like to know the chemical composition of seeds; the relative moisture content at different stages of development and how 'dry' we can get them; the development of the embryo; and the responses of the seed to various treatments. This requires us to produce large quantities of seed so we can weigh them, dry, then re-weigh them; extract protein, carbohydrate, and fat from the seeds (sounds cruel, but it is necessary!), and other kinds of laboratory manipulations. It is also essential that we have simple, quantitative measures of germination so we can study the environmental factors that influence germination in begonia. For example, are there important chemical signals that seeds sense from the environment and stimulate (or inhibit) germination? Do begonia seeds germinate better in clusters than as single individuals? You can see that many interesting and important questions lie ahead for our work!

One of the most exciting (for gardeners) attributes of begonia (and frustrating for taxonomists) is the relative ease with which hybrids can be made between different species. A large amount of genetic diversity can be generated by making interspecific hybrids yet the potential for development of new and useful begonias has barely been tapped. There are unquestionably great opportunities for new begonia forms that can be readily adopted for large-scale use by the ornamentals industry. To be successful, these new forms should be garden worthy, reliable, colorful, easy to grow in a garden, disease-resistant and also easy to produce in a large-scale by standard greenhouse practices. Not a trivial set of requirements. Fortunately, plants with such attributes already exist in the trade (the common Semperflorens-cultorum come to mind), so new forms with such attributes are possible. An example of such forms may be a bright yellow-flowered Semperflorens. Barriers to the exchange of traits such as yellow flowers, between different species appear to exist in begonia, but a systematic examination of these barriers has not been undertaken (or at least not published for all to learn about it). One of the OPGC's goals with begonias is to systematically explore the potential for exchange of genes between different groups. This is a long-term prospect that could lay the foundation for development of new cultivars and commercial products.

The maintenance of a clonal collection of begonias is an expensive and demanding task. Maintaining as much of our collection as possible in the form of seeds would provide significant cost-savings. However, there are begonias that can only be maintained as plants and to improve the efficiency of managing our clonal collection, we are introducing all our begonias into tissue culture so we can maintain them under sterile, controlled conditions. (See photo of begonia shoot proliferation in tissue culture on back cover.) An advantage of a collection in tissue culture is that the environment can be manipulated more precisely to slow down the growth of the plants and reduce the number of times an accession must be handled. Fewer handling of plants translate into less chances for errors or damage. Ideally, we would like to keep our begonias in a culture jar for a year or more before we have to replenish the medium. This area is also one ripe for systematic evaluation.

The ABS was instrumental in the initial development of the begonia collection at the OPGC. We are participating in our Save Our Species program and seek to collaborate further with interested members of the Society. Our commitment to begonias is demonstrated by our designation of 2012 as The Year of Begonias! We have joined forces with colleagues at The Ohio State University and with the OFA-The Association of Horticulture Professionals, to showcase begonias throughout the year. During the annual OFA Short Course held every July in Columbus there will be a half-day workshop dedicated to begonias. We have a series of presentations and other events involving begonias throughout the year. Some undergraduate students have been growing begonias in order to learn production practices and to participate in the Spring Plant Sale and Garden Fair of the Chadwick Arboretum. Columbus is poised to host national meetings of the American Public Gardens Association and of the Botanical Society of America in the summer of 2012 and various tours offered by these organizations will showcase begonias in our collection and gardens. We are excited about spreading Begonia enthusiasm and information to help interest in the genus grow along with our industry.

Compartment of the OPGC greenhouse
Photo by Steven Haba

Steven Haba, Greenhouse Coordinator, Haba.3@osu.edu (614-292-1941)

Pablo Jourdan, Director & Associate Professor, Jourdan.1@osu.edu (614-292-3708)

Begonias at Mead Botanical Garden, Winter Park, Florida

By Paul Butler, Winter Park, FL

This botanical refuge, close to the center of the city of Orlando, occupies a 47-acre site and was originally established to contain the plant collection after the passing of one of the foremost early Florida horticulturists, Dr Theodore Mead (1852-1936). Mead collected and grew plants from around the world, and working with seeds, bulbs, plants of rare and exotic species, amassed a huge collection of valuable plants including orchids, amaryllis, crinums, gladioli, cacti, daylilies, azaleas, bromeliads, and caladiums. He played a crucial role in collaboration with Dr. Louis Knudsen of Cornell University in the development of a sterile medium technique for growing orchids, a new method which revolutionized orchid propagation. He also worked closely with Dr Henry Nehrling of Gotha, Florida. Together they were responsible for the early commercial growing and cultivation of caladium, amaryllis and other plants and were pioneers in helping to establish the plant nursery industry of Central Florida.

The botanical garden, named in Dr. Mead's memory and containing the bulk of his plants and plant collections, opened to the general public in 1940 but in later years suffered a slow decline. By 1988 it had fallen into disrepair and was in dire need of restoration. Budding signs of restoration emerged as Winter Park residents organized to restore their park, with the approval of the city, and these restoration effects are now beginning to bear fruit. One of the original three greenhouses has survived and this structure has formed the nucleus in the rebuilding and expansion of Dr Mead's horticultural legacy.

The greenhouse, fitted with a new roof and irrigation system, is now being used as a base for an active and growing team of volunteers and other interested parties, under the leadership of well-known Winter Park horticulturist Randy Knight. Both formal and informal teaching classes are taking place that involve hands-on learning about plants and their propagation, garden restoration, pruning, and all aspects of horticultural care. A key feature of the greenhouse has been the establishment of an extensive collection of begonias, containing some rare species as well as many of the beautiful and popular begonias most people would easily recognize. An important objective of the collection is to introduce and educate visitors to the greenhouse about these lovely, easy-to-grow flowering and dramatic foliage plants. The collection reflects central Florida's 9b hardiness zone classification, so the begonias are mainly of the rhizomatous, cane-like, shrub and wax types.

If you are planning a visit to central Florida in the near future, why not drop in and see the collection? We are at 1500 S Denning Drive, Winter Park, FL 32789. Mead Botanical Garden is open every day from 9 am until 5 pm; the greenhouse itself is open on Tuesday and Friday mornings. Admission is free. For more information, see our website at www.meadgarden.org, or send us an email at info@meadgarden.org, if you have any questions.

Rediscovery of Begonia arnottiana (Wight) A. DC. A little known South Indian endemic species

E. S. Santhosh Kumar and Sam P. Mathew, *Tropical Botanic Garden and Research Institute Palode, Thiruvanthapuram, 695 562, Kerala, India*

The tropical rainforests of Peninsular India and Sri Lanka are known to host several lesser known and endangered *Begonia* species having promising ornamental value. The pristine mountain ranges of Western Ghats along the western coast of Peninsular India, covering an area of approximately 160,000 km^2, are being recognized as one of the ecological 'hot spots' of the world. According to a current inventory, the tropical rain forests occurring along the slopes of the Western Ghats are known to host 17 species of *Begonia* (Smith et al., 1986). These species most often are found in moist microhabitats of primary rain forests, on rocky slopes with rich humus and even directly on moist rock surfaces near rivulets and waterfalls. Detailed monographic and phytogeographical studies on the indigenous *Begonia* species are still in progress.

Begonia arnottiana

From a taxonomical point of view, *Begonia arnottiana* (Wight) A. DC. is a little known endemic species with extensive confusion on its identity with *Begonia cordifolia* (Wight) Thw. *Begonia arnottiana* was thought to be extinct and known only from its type collection this may be the reason for the confusion that remained unre-

Begonia arnottiana

Above, both: *Begonia arnottiana* (Wt.) A. DC. - flowers

solved for several decades. These two species were originally proposed by Robert Wight, based on his own collections from the South Western Ghats of Peninsular India. The type specimen of *Begonia arnottiana* was obtained from the Courtallum area in September 1835 (R. Wight, 693) and published in 1852 as *Diploclinium arnottianum* Wight. The type locality of *Begonia cordifolia* was recorded as Malabar on the type collection (R. Wight, 835) procured in June 1836 by Robert Wight. The south-western coast of the Kerala State of the Indian union was referred to as 'Malabar' in Indian history from 3000 BC right up to Indian independence and this geographical region was renowned as one of the major trade centers between South Asia and Western/Middle Eastern countries such as Mesopotamia (Iraq), Egypt, Greece, Rome, Jerusalem, Portugal, France, England etc. It is presumed that the type collection of *Begonia cordifolia* (Wight) Thw., originally published as *Diploclinium cordifolium* Wt. in 1852 was collected from somewhere in the northern part of Kerala. The type specimens of both taxa are housed at the Royal Botanic Garden Edinburgh (E).

The phytogeography and taxonomy of *Begonia arnottiana* and *Begonia cordifolia* are remarkable. From a phytogeographical point of view, the former is confined to the southern-most part of the South Western Ghats, while the latter has an extended distribution from the South Western Ghats towards Sri Lanka. Taxonomically, the Sri Lankan specimens of *Begonia cordifolia* differ a little from the Western Ghats specimens in having somewhat pilose petioles and larger flowers**.** *Begonia arnottiana* was known only from the type collection until its recent discovery at Ariyankavu pass, Kollam district, Kerala state. The rediscovery of *Begonia arnottiana* has great significance not only from a conservation point of view but also in eliminating the taxonomical confusion on the specific status of the two species. *Begonia arnottiana* (Wight) A. DC. was

treated as a synonym of *Begonia cordifolia* (Wight) Thw. by many experts until Smith & Wasshausen (1983) segregated *Begonia arnottiana* (Wight) A. DC. as a distinct species. Detailed morphological studies carried out by the authors based on the latest collections have led to the conclusion that *Begonia arnottiana* (Wight) A. DC. and *Begonia cordifolia* (Wight) Thw. have distinct specific status and are not conspecific, supporting Smith & Wasshausen.

Begonia arnottiana differs from *Begonia cordifolia* by its tuberous habit, petioles not enclosed by scarious stipules, scape few flowered with simple axis about equal or shorter than the leaves, male flowers with 4 tepals and female with 3 tepals; whereas in *Begonia cordifolia* the root stalk is rhizomatous, about 3 x 1.5 cm; petioles enclosed by scarious stipules, scape many flowered, dichotomously branched, equal to or longer than the leaves; male flowers with 4 tepals and female with 3-5 tepals.

The micro-habitat of *Begonia arnottiana* at Aryankavu is in a deciduous forest region located between latitudes 8⁰ 58' 16" N - 8⁰ 58' 63" N and longitudes 77⁰ 8' 23" E- 77⁰ 8' 56" E near the Thenkasi-Shenkotta highway. During a routine plant exploration in December at Aryankavu forest, an interesting *Begonia* species in flower was found growing along the forest edges of the roadside. A few specimens were collected and later identified as *Begonia arnottiana.* A detailed investigation of its natural habitat located one population of around 100 individuals surviving along the forest edges under partial shade and light. The phenology of this species is quite interesting. Flowering and fruiting concluded by January/February and thereafter the fleshy leaves perished during the spring and the tuber hibernated within the soil. Later, during the beginning of the South-West monsoon in June, the tubers started to sprout again along with other young seedlings germinated from seeds of the previous year.

The rediscovery of *Begonia arnottiana* after a period of 158 years is serendipitous from a conservation point of view. A few samples collected from its natural habitat at Aryankavu have been introduced at the field gene bank of the Tropical Botanic Garden and Research Institute. The introduced plants were well-grown, with flowering and fruiting during the past season. Since *Begonia arnottiana* was known only from its type collection and protologue, a detailed taxonomic description along with photographs based on the recent collection, included herewith, will hopefully further taxonomic studies of Indian Begoniaceae.

Begonia arnottiana (Wight) A. DC. , Prodr. 15 (1): 322. 1864; C.B. Clarke in J.D. Hooker, Fl. Brit. India 2: 641. 1879; L.B. Smith & D.C. Wasshausen, Phytologia 52: 441. 1983; Smith B. L. & al., Smithsonian Contrib. Bot. (Begoniaceae Part I) 60: 140. 1986. *Diploclinium arnottianum* Wight, Icon. Pl. Ind. Or. t. 1815. 1852.

Perennial acaulescent herb; tuber rounded. Leaves 6-20 x 4-23 cm, ovate or rotundate, deeply cordate at base, obtuse or emarginate at apex, crenate at margin, sparsely pilose and blotched above; petiole erect to ascending, 5-20 cm long, pinkish. Scape a few per axil, bearing up to 10 flowers. Male flowers: tepals 4, the outer rotundate to 15 mm wide, truncate or cordate at base, inner oblanceolate, rounded at apex. Stamens about 45,

continued on page 75

Begonia arnottiana in habitat

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Begonia arnottiana continued

connate at base. Female flowers: Tepals 3-4, semipersistent on capsule, outer pair rotundate, to 17 mm wide, glabrous, inner unequal, 12 x 5 mm, obovate-oblong. Ovary 6-20 x 5-15 mm including the wings; styles 3, connate at base, stigma papillose. Capsule thick, whitish.

ACKNOWLEDGEMENT

The authors are thankful to Dr P. G. Latha, Director, Tropical Botanic Garden and Research Institute for facilities and constant encouragement.

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2012 ABS Awards - Call For Nominations

By Anna Salisbury, Awards Chairman

They are the American Begonia Society's "Magnificent Six". You have an opportunity to make six nominations for 2009. Note that the Ziesenhenne Award criterion has changed from its original form.

We will be joining together in 2012 in San Diego, CA and will present the most prestigious and honored awards that the society hands out to its members. All of these awards recognize the outstanding service and achievements that have been done for the national organization by its members. You, the membership, are responsible for making the nominations. Please take the time now to write up your nomination. The nomination must contain the name of the award, the recipient's name and reasons that make them or the plant eligible for the award.

There are many worthy members that are possible winners for these awards. If you have nominated someone in the past and they have not won, please nominate them again. Note the new criteria for the Rudolf Ziesenhenne Award. The committee may present only one of each of the awards each year.

I must receive these nominations by **April 5, 2012**. Remember the Board has approved email nominations; however, by mail or email, **one nomination per page**! Please mail all nominations to:

Anna Salisbury, Awards Chairman
P. O. Box 452, Tonkawa, Ok. 74653
Email: geneann@sbcglobal.net

Award Criteria:

The **Herbert P. Dyckman for Service** is presented to a member who has rendered long-term or very outstanding service for the American Begonia Society above and beyond the normal duties of a member or officer.

The **Eva Kenworthy Gray Award** is given for contributing original material toward helping the rank and file members further their study of begonias.

The **Alfred D. Robinson Medal of Honor** is for a begonia cultivar that has been released for at least five years and no more than fifteen. This hybrid must be registered with the Nomenclature Department and widely distributed, and the originator of the begonia must be a member of the American Begonia Society.

The **Rudolf Ziesenhenne Award** is presented to an Editor who collects and edits the works of others for a publication either U.S. or international and: a. who encourages a broad array of writers both scientific and practical to write and contribute articles. b. who issues a publication on begonias that is both excellent in design and content and which contributes to our knowledge and appreciation of begonias.

The **Marge Lee Award** is given to a person who contributes something of a spiritual value toward cementing goodwill and harmony among members.

The **Gene Salisbury Award** is given to a grower who exemplifies the very best in cultural practice, but who also bring to us by their careful work new species and hybrids. These are growers who contribute to our society simply through their excellence in growing begonias.

These awards may be received only once however The Alfred D. Robinson Medal is presented to a cultivar and may be won more than once by a hybridizer.

Recent past recipients of ABS awards

Year	Dyckman	Gray	ADR Medal	Ziesenhenne	Salisbury	Marge Lee
2001	Richard & Wanda Macnair	Brad Thompson	*B.* 'Little Miss Mummy'	Ed and Phyllis Bates		
2002	R&L Fuentes	Helene Jaros	*B.*'Flamingo Queen'	Tamsin Boardman		
2003	Janet Brown	Cheryl Lenert	*B.*'Cowardly Lion'	Freda Holley		
2004	Maxine Zinman	Charles Jaros	*B.*'Black Gold'	Karen Bartholomew & Chuck Anderson		
2005	Michael Kartuz	Don Miller	*B.* 'Holley Moon'	Brad Thompson	Gene Salisbury	Tom Keepin
2006	Johanna Zinn	Rekha Morris			Charles Jaros	Cheryl Lenert
2007	Howard Berg	Morris Mueller	*B.* 'River Nile'	Tom Keepin	Bob Golden	Carol Notaras
2008	Mary Bucholtz	Bill Claybaugh		Paul Tsamtsis	Doug & Joyce Pridgen	Donna Marsheck
2009	Tom Keepin	Peter Sharp	*B.* 'Shaun Henthorne'	Julie Vanderwilt	Don Miller	Mary Sakamoto
2010	Freda Holley	Charles Henthorne		Rekha Morris	Deb Cox & Robin Jordan	Lulu Leonard
2011	Cheryl Lenert	Johanna Zinn	*B.* 'Taylor Anne'	Joe Moore	Michael Kartuz	Michael Kartuz

B. 'Shaun Henthorne' The Alfred D. Robinson Medal of Honor winner in 2009.
Mike Kartuz named this hybrid in memory of Charles Henthorne's son, Shaun, who died in 2002.
Photo by Charles Henthorne

The Begonian

May/June 2012

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