January-February 1983

The BEGONIAN

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Publication of the American Begonia Society

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INSIDE/ *January-February 1983*

THE COVER: Nearly 200-year-old botanical painting of *Begonia syphillitica* (current name *B. balmisiana*) was made about 1791 and has never before been published. It was uncovered by San Diego historian Iris Engstrand during research in Spain, as were two other begonia paintings. See articles beginning on p. 4.

NOTES/ *From the editor*

Alas, we occasionally print erroneous information.

Milban, not "Milcurb," is the new fungicide effective against powdery mildew which Robert Raabe meant to cite in his Begoniafest convention seminar, he informs us. If you save back issues of *The Begonian* for future reference, you'll want to make note of the correct name on page 110 of the September-October 1982 issue.

And on page 146 of the November-December issue, we credited Ralph Corwin as photographer of *B.* 'Christmas Candy'. But grower-extraordinaire Mabel Corwin, hybridizer of the plant, was the family member who captured the image on film. If she takes to photography the way she did to growing, husband Ralph will have to hang up his camera!

□

Have you been dying to know who won the Challenge 82 contest to enroll new members in ABS? Begonia enthusiast and ABS Second Vice-President Dan Haseltine won a landslide victory with six new members. Second was Arlene Pedersen, also of Chicago, with two, followed by a host of others with one each.

For his efforts, Dan will receive a $50 gift certificate at the begonia nursery of his choice. The other dedicated participants each will receive a color reproduction of an 1800s Curtis botanical print.

We figure anyone whose love of begonias inspired others to join ABS is a real winner!

□

The full-color illustrations in this issue are made possible by funds generated by the sale of Philippine species collected by Martin Johnson of Redwood City, Calif.

—K.B.

FORUM/ *Want to help upgrade slide programs?*

Dan Haseltine

There are a lot of people out in begonia land with cameras who have taken pictures of their begonias and their friends' begonias. Many have good slides of begonias that may just be laying around waiting to be viewed by others in our society.

I suggest that you review what you have and donate some of those beautiful slides to the ABS slide library so I can upgrade our programs.

As your new slide librarian, I have reviewed the programs available and found many of the slides to be old and faded. Seven of the 13 programs lack scripts or

Please turn to page 12

A begonia discovery: paintings

Two centuries ago, Spanish scientists made two expeditions to the New World in search of new plants and animals. The three botanical illustrations of begonias published here were made on those expeditions—in 1790 and 1791. Unbelievably, two of the three have never before been published; the third is contained in a new book by San Diego historian Iris H. W. Engstrand.

The articles that follow tell the incredible story of these early scientific explorers, where they found the Begonia *species, why the illustrations were hidden, the real identity of* "Begonia syphillitica" *(on the cover), and what Dr. Engstrand's fast-paced book on these scientists is like.*

Dr. Engstrand came to ABS—in the person of Thelma O'Reilly of the ABS nomenclature department—for assistance in identifying the species in color slides she took of the paintings. Thelma knew B. gracilis. *She duplicated all three slides and sent them to ABS nomenclature director Carrie Karegeannes and Dr. Lyman B. Smith, botanist emeritus at the Smithsonian Institution. They confirmed* B. gracilis *and identified an unknown begonia from Taboga as* B. plebeja. *Carrie's search for the identity*

Spanish scientists identified three New World begonias, but were unable to publish findings

Iris H. W. Engstrand

Among very early botanical illustrations of New World begonias are at least three resulting from the works of two great Spanish expeditions to the Americas during the final decades of the 18th century. These were the Royal Scientific Expedition directed by Martín de Sessé (1787-1803 and the Around-the-World Expedition of Alejandro Malaspina (1789-1794).

Unfortunately, the thousands of plant and animal drawings, complete with accompanying descriptions based on the then-new Linnaean system for naming plants were not published nor even made widely known at the time. Much of this new information therefore never reached the European scientific community and Spain's efforts were little realized for nearly 100 years after the fact.

Two books, *Flora Mexicana* and *Plantae Novae Hispaniae*, containing many of Sessé's botanical descriptions, were published in Mexico in the late 1880s, but no drawings were included. A single volume on the Malaspina expedition, again without the extensive botanical and zoological illustrations, was published in Spain in 1885. By this time credit for the discovery or identification of many new species had gone to British, French, American, or other scientists.

Only a few begonia drawings are known to date from before 1700 and not many before 1800. We now know three more beautiful illustrations of begonias were drawn before 1800 by Spanish artists.

The two begonias of the Malaspina expedition were drawn by José Guío and Francisco Lindo, both artists working under the direction of Luis Née, a French botanist associated with the Botanical Garden of Madrid. To survey Spain's New World possessions, two ships, the *Atrevida* and *Descubierta*, were designed for scientific work and fitted with the latest instruments, books, drawing materials, and other facilities for surveying, identifying, and classifying the plants and animals of an entire continent. They departed from Cádiz in southern Spain in July 1789 under the command of Alejandro Malaspina of the Royal Navy, first visiting Argentina, the Patagonian Coast, and the Falkland Islands.

Rounding Cape Horn, they stopped

Iris H. W. Engstrand, author of Spanish Scientists in the New World, *is professor and chairman of history, University of San Diego.*

hidden in Spain since 1700s

of "B. syphillitica" *is recounted on page 9.*

The paintings came to light after Dr. Engstrand went to Spain to research a book on early Spanish explorers in the 1960s. She was at the Naval Museum—usual repository of expeditionary material—when an old man suggested she try the Royal Botanical Gardens. Once there, she was met by overcautious personnel. But where her academic credentials were accepted, she was able to make four additional trips to Madrid for information.

Her search revealed hundreds of botanical and zoological watercolors tied together with ancient twine and hidden in a basement, undisturbed for many years. These begonias were three of them; more unpublished paintings of begonias may be in those bundles. Only Dr. Engstrand's further research will tell.

"As a collector and grower of begonias and many other plants," Thelma notes, "I am deeply grateful to Dr. Engstrand for bringing to light the historical facts about the brave, dedicated early Spanish pioneers who spent so many years of their lives collecting and recording important scientific and botanical information."

B. *gracilis*, probably variety *diversifolia*, was painted in Mexico in 1791. This illustration was first published in the recent book, *Spanish Scientists in the New World*.

along the coasts of Chile, Peru, Ecuador, and Panama. While at Panama in December 1790, they put ashore at the island of Taboga within the gulf to study the terrain and collect plants. Among these was *Begonia plebeja* (recently identified), so skillfully drawn by José Guío. Some 200 examples of Guío's work are found in the Royal Botanical Garden of Madrid and characterized by a black and yellow border with a monogram in red ink. After Panama, the *Atrevida* with Née and Guío sailed to Acapulco while the *Descubierta* stopped in Nicaragua.

From Acapulco, a small contingent of Malaspina's scientists traveled to Mexico City and made contact with members of the Royal Scientific Expedition. Martín de Sessé of the Royal Expedition, with the help of several others from Spain, had successfully directed the building of a botanical garden near the Viceroy's palace. Working with him was José Mariano Moziño (also spelled Mociño), a young Mexican botanist, and several local artists from the painting Academy of San Carlos. One of these, Francisco Lindo, joined Luis Née on a journey outside the capital, since Guío was suffering from fever.

Departing from the capital in late August 1791, they traveled northeast by way of Zempoala to Real del Monte, a silver mining region administered by the Conde de Regla, a famous mine owner and philanthropist of the period. The begonia drawn by Lindo is identified at the bottom with the words "N. Esp. (New Spain) Real del Monte *Begonia* vulg. Carne de Doncella Lindo." It is *Begonia gracilis* (probably variety *diversifolia).*

As a result of their excursions in and around the Valley of Mexico, members of the Malaspina group collected, identified, and drew hundreds of native plants. They also gathered information about other natural resources, commercial products, and the Indian inhabitants of the region.

They returned to Mexico City in November and to Acapulco in December 1791, where they joined a branch of the expedition that during the same time had visited California and the Pacific Northwest as far north as Alaska. United once

The book about Spanish explorers:

Review/Rudolf C. Ziesenhenne

Spanish Scientists in the New World
Dr. Iris H. W. Engstrand
University of Washington Press
1981. 220 pages. Illustrated. $25.

Subtitled *The Eighteenth-Century Expeditions*, this book presents an interesting account of government and private expeditions during the late 1700s to the New World to determine its natural resources of plants, animals, birds, and minerals. The 12 chapters recounting individual expeditions have 10 to 20 pages each.

Featured by the author among the illustrations are five of the thousands of drawings made by artists on the scene of the expeditions, one of them of *Begonia gracilis*. There are also 41 black and white drawings and five maps which greatly aid in understanding the people, places, and routes of the various expeditions.

Chapter 3 was particularly interesting to me because it tells about the José Moziño botanical surveys of Central and Northern Mexico. José Moziño worked under the direction of Martin de Sessé, director of the Royal Scientific Expedition to New Spain.

I am intrigued by the information Dr. Engstrand presents regarding the habitat of *Begonia monophylla* Pavon ex A.DC., now in the Boissier herbarium in the Conservatoire et Jardin Botanique, Geneva, Switzerland.

Alphonse de Candolle described this

Dr. Engstrand's book, Spanish Scientists in the New World: The Eighteenth Century Expeditions, *is based upon her extensive research in Spain, Mexico, and elsewhere. A bookstore can order a copy for you, or write for mail-order information from the University of Washington Press, Seattle, WA 98105. Rudy Ziesenhenne, begonia authority and former ABS nomenclature director, lives at 1130 N. Milpas St., Santa Barbara, CA 93103.*

again, the scientists exchanged notes and worked on further identification and classification. The *Atrevida* and *Descubierta* set sail for the Philippines in January 1792.

The Royal Scientific Expedition was well established in Mexico City by the time of Malaspina's visit. Sessé, a physician from northern Spain, had sailed for Mexico from Cuba in 1787 after receiving permission from King Carlos III to set up a botanical garden in the capital. He was joined by several other Spanish scientists who would aid in surveying the vast flora of Mexico and in teaching botany.

Two artists, Atanasio Echeverría and Vicente de la Cerda, were employed from the Academy of San Carlos. They became extremely able botanical illustrators and Echeverría especially exhibited a talent seldom matched in this field. He also painted butterflies, birds, and insects with uncanny precision.

Begonia syphillitica [published with only one *l* in the name, but not before the oldest—and therefore correct—name *B. balmisiana* was published for the same species by another writer in 1794], was collected on the third excursion of the botanists in 1791 and drawn by one of the above artists a short time later. Live plant material was shipped back to Spain from the Madrid Botanical Garden in 1793.

During the 10 years of activity, the artists completed more than 2,200 drawings. Two thousand of these recently came to light in Barcelona, Spain, and have been acquired by the Hunt Institute for Botanical Documentation in Pittsburgh. These are now available to researchers, but so far no begonias seem to be among them.

The Malaspina expedition surveyed the Philippine Islands, Guam, New Zealand, Tonga, and Australia, returning to South America and around Cape Horn. Even though it did not circumnavigate the globe, the journey has always been referred to as an "around-the-world" sojourn. Certainly it covered a great expanse of territory during its 62 months of constant travel.

Arriving in Cádiz at the end of September 1794, the members of the expedition

'a real adventure for everyone'

plant in his *Prodromus*, Part 15 (1) 1864 on page 285. Pavon notes *B. monophylla* was collected in Peru; de Candolle refutes Pavon's statement and insists the plant is Mexican. I have a photocopy of the herbarium type specimen of *B. monophylla* from Geneva and believe that a plant found by Dr. Harris of Santa Barbara, Calif., near Colima, Mexico, in January 1980 is the same plant.

What makes this interesting is that in February 1791 Sessé, Castillo, and Moziño and the artists Cerda and Echeverría collected in Colima. These plants and notes were sent to Spain where Hipolito Ruiz and José Pavón, leaders of an expedition to South America, somehow were given access to them. When Sessé learned this, he petitioned the king of Spain in January 1804 to order Ruiz and Pavón to deliver to Sessé all the drawings, herbaria, and other products of the Royal Scientific Expedition to New Spain. Sessé finally received the material in March 1804.

Later Moziño took plants and drawings to Geneva, where Augustin Pyramus de Candolle showed great interest in the plant drawings. De Candolle noticed that *Begonia monophylla* listed Pavón's name as author and collector when it was obviously a Mexican collection; Pavón collected in Peru and was never in Mexico. The Harris collection is evidence that *Begonia monophylla* is found growing wild eight miles west of Colima, Mexico.

The writing of *Spanish Scientists in the New World* with its valuable new material was made possible by the perseverance and diligent research of Dr. Engstrand in the United States and in Spain, where the long-lost records and herbarium specimens were found.

The book is not a dry, scientific compilation, but a real adventure for everyone to enjoy; one becomes so interested that it is hard to put the book down.

Never before published, this painting of *B. plebeja* was made in 1790 on the Panamanian island of Taboga. Border was a trademark of the artist, José Guío.

headed for Madrid with their bundles of documents and drawings. Née had an herbarium of 10,622 plants. They were at first praised for their work by King Charles IV, but royal support for editing and publishing of reports was quickly withdrawn because of Malaspina's inopportune involvement with Queen Maria Luisa.

Carlos IV, king since the death of his enlightened father in 1788, believed court rumors and became suspicious of Malaspina's ambitions. He banished his rumored rival and ordered the results of five years' work to be shelved. Malaspina eventually was allowed to return to Spain, but was never able to publish his materials. At present they are in manuscript form in Madrid, primarily in the Naval Museum, the Museum of Natural History, and the Royal Botanical Garden.

The Royal Scientific Expedition, with

the addition of Mexican botanists José Moziño and José Maldonado, continued to work in New Spain throughout the 1790s. These scientists accompanied expeditions to Vancouver Island and other areas of the Pacific Northwest. Moziño also traveled to Guatemala and Nicaragua while Sessé visited Cuba and Puerto Rico.

The scientists received an extension of their original six-year contract but were finally ordered to return to Spain. Numerous delays prevented their departure from Veracruz until 1803. Moziño decided to accompany Sessé to Madrid to assist in the completion and publication of the great *Flora Mexicana*. Like Malaspina, although for different reasons, Sessé was unable to secure publication of his results. The reign of Carlos IV was beset by political and military problems commanding greater attention than patronage of natural history.

Sessé died in 1808 but Moziño worked doggedly on trying to keep the herbarium, manuscripts, and drawings together. Finally, because of the French invasion under Napoleon in the fall of that year, Moziño was appointed director of the Royal Museum of Natural History. His good fortune turned to ill in 1812 when returning Spanish patriots considered him a traitor. Moziño was forced to flee on foot to the French border with all of his materials in an old hand cart.

He eventually made his way to Geneva, where he spent several years working with Swiss botanist Augustin de Candolle. Still loyal to Spain, Moziño received permission to return in 1817, but died in Barcelona in May 1820. The 2,000 drawings in his possession at the time are those now at the Hunt Institute.

Thus, the several tragedies which befell returning members of these 18th century expeditions caused a disorganized mass of information to be buried in archives or housed in private libraries. This prevented publication and consequently resulted in the omission of Spanish descriptions and classification from the major floras of the early 19th century. *Flora Mexicana* and *Plantae Novae Hispanae* were obsolete at the time of their publication in the late 1880s. In recent years, however, several books, including my own, give long overdue credit to these pioneers of Spanish science whose names and contributions have remained virtually unknown for generations.

Begonia syphillitica provides both surprises and answers

Carrie Karegeannes

The lovely watercolor of *Begonia syphillitica* Sessé & Mociño on the cover, published here for the first time almost 200 years after it was painted, closed the circle of several long pursuits by ABS members—with several surprises.

Painted in Mexico in 1791 by one of the artists of the Spanish Royal Scientific Expedition to New Spain, it was rediscovered only recently by Iris Engstrand during research in the Royal Botanical Garden of Madrid. As Dr. Engstrand explains (on page 4), the Spanish scientist-explorers were not able to publish the painting (and many others) in their lifetimes. Even the names they gave the plants they had found were not published until a century later, in *Plantae Novae Hispaniae* in 1890 and *Flora Mexicana* in 1894, and then without any illustrations.

By that time, other botanists had already published other names for many of the plants. In their 1945 review of the *Begonia* specimens of Sessé and Mociño, Lyman B. Smith and Bernice G. Schubert determined that *B. syphillitica* was the same as *B. monoptera* published by Link and Otto in 1828.

Dr. Engstrand consulted Thelma O'Reilly of the ABS Nomenclature Department on identifications of the *Begonia* species in the paintings she had found and photographed, and Thelma sent slides

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to me and Dr. Smith, botanist emeritus at the Smithsonian Institution. With keen anticipation, I projected the slides, comparing *B. syphillitica* with *B. monoptera* illustrations and type photo.

To my surprise, the capsule wings and leaves matched those of the closely related *B. balmisiana* instead, showing traits that some have held to be key differences separating it from *B. monoptera*. My illustrations and photos showed truncate (as if cut off) or cuneate (wedge-shaped) bases on the few *B. monoptera* leaves depicted and one large wing and two very narrow ribs—or only one wing—on the ovary and capsule. *B. syphillitica*, I saw in the painting, has two small triangular wings, as well as the larger wing, and deeply cordate leaves with rounded, overlapping basal lobes.

Quickly I pulled out all the illustrations and photos I had of *B. balmisiana* and its varieties and synonyms, in addition to those of *B. monoptera*. I was stunned to find that the original illustration of *B. balmisiana*, published by Balmis in 1794, clearly was taken from the Sessé and Mociño expedition's painting! When Dr. Balmis or his illustrator saw the painting, it must not have had the inscription it now bears: *Begonia syphillitica*. But here was unmistakable evidence that *B. balmisiana* was originally based on the very plant Sessé and Mociño called *B. syphillitica*.

B. balmisiana has been listed as named by Ruiz (from his herbarium) and published by Klotzsch in 1855, but a few years ago I had noticed that Alphonse de Candolle in his 1864 classic, *Prodromus*, also cited a publication by Balmis. Tracking this down with the aid of the New York Botanical Garden library, I found Balmis had published a beautiful illustration and a description—in 1794, much earlier than Klotzsch's work and much earlier than *B. monoptera* of 1828.

Balmis's Spanish publication referred to a *Flora Mexicana* and did not mention Ruiz. Jack Golding of Kearny, N.J., this year obtained a translation that showed Balmis was not quoting an earlier work and that also explained how he happened to publish a species honoring his own name. The doctor wrote that scientists in New Spain said they would name it in his honor in the *Flora Mexicana*, "on which they had begun to work," because he had introduced it into Europe and was working on its medicinal uses.

Something happened before Sessé and Mociño's *Flora Mexicana* was published a century later, however, because the *Flora* did not include the name *B. balmisiana*. It did include *B. syphillitica* (spelled with one *l*). Perhaps the scientists who communicated with Balmis found the name *syphillitica* already given to the plant by others of the expedition. Indeed, the shipping lists from New Spain in the 1790s carry that name. And Sessé and Mociño's first work, *Plantae Novae Hispanias*, also carrying a description of *B. syphillitica*, was completed in 1791 (mailed for forwarding to Spain in June 1791 with descriptions of 1,383 plants and with the drawings that were mentioned in it, I learned from Dr. Engstrand's book).

As fate would have it, Balmis's description and medical study of *B. balmisiana* reached publication in 1794, while Sessé and Mociño's was long delayed by tragic events, as Dr. Engstrand has recounted. And in all the upheavals of the times, the paintings were lost and none published.

I also learned from Dr. Engstrand's account that part of the Sessé and Mociño herbarium was sold along with Ruiz and Pavón specimens and is now in the British Museum herbarium and that of Kew labeled "Herbarium Pavón" — although Ruiz and Pavón were never in Mexico. This circumstance could explain why Klotzsch and de Candolle found *B. balmisiana* in "Ruiz's herbarium"—although one would not expect it to be under that name.

Now, are *B. balmisiana* and *B. monoptera* the same or two separate species? If separate, *B. syphillitica* must equal *B. balmisiana*, not *B. monoptera*.

The capsule and leaf traits seemed striking, but the noted authority Alphonse de Candolle in 1864 had questioned whether the two were not really the same. If these leaf and wing shapes vary on these species, especially on the same plant, then the shapes would not hold as distinguishing traits. Dr. Smith at the Smithsonian, agreeing that Balmis's species was

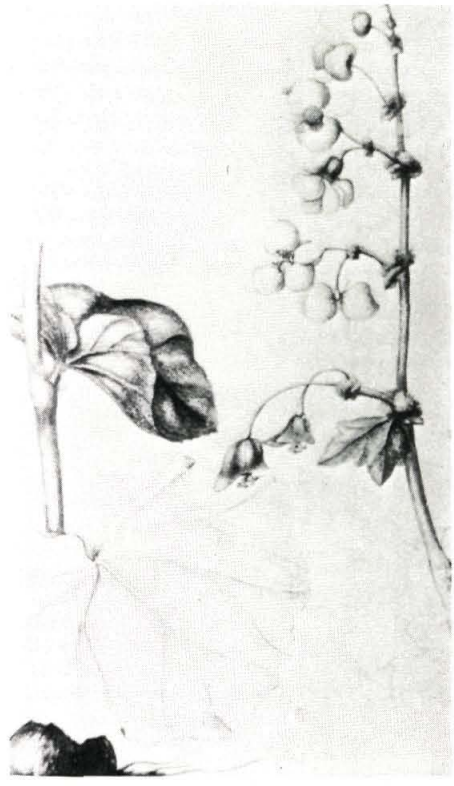
now shown to be based on Sessé and Mociño's, suggested that I study dried plant material in the U.S. National Herbarium.

A day in the Herbarium poring over folders of specimens and—excitingly—photos of original Sessé and Mociño specimens did turn up variations. Most of the specimens in both *B. monoptera* and *B. balmisiana* folders had cordate leaf bases with rounded basal lobes and only ribs instead of the two smaller ovary wings. A few had truncate leaf bases, and some of the ovaries and capsules had the two triangular smaller wings.

An example of one with merging traits, *Rogers McVaugh no. 15988* in the *monoptera* folder, has a stem carrying one small truncate leaf and one small obtuse leaf below the inflorescence, with a lower cordate leaf. The bottom of the stem, on the other herbarium sheet of *no. 15988*, is attached to a tuber and carries two cordate leaves. Ovaries in this inflorescence have two small triangular wings and a third larger wing. The photo of the type for *B. populifolia* H.B.K., cited by de Candolle as a synonym for *B. balmisiana*, shows the lower leaf rounded and cordate and the next one up the stem truncate. The single capsule has one large wing and I believe the smaller wings are merely ribs, but that is not clear.

Photos from the Field Museum of Natural History in Chicago show that Sessé and Mociño's specimens carry Dr. Smith and Dr. Schubert's notations of 1943 designating some of them as *B. monoptera* and others as *B. balmisiana*. By the time they published their findings in 1945 they followed de Candolle's suggestion that *balmisiana* and *monoptera* were actually the same species and so cited *B. syphillitica* as equal to *B. monoptera*, then thought to be the oldest name.

I must agree that these merge. Uppermost leaves on the stem, just below the flowers, apparently tend to be truncate or obtuse, even cuneate at the base, often with acute tips, while the lower leaves are larger, rounded, and usually cordate. (Upper and lower leaves on some other Mexican tuberous species are also known to differ.) *B. monoptera* was described as somewhat pubescent, and *B. balmisiana* var. *mitellifolia* is also pubescent.



First-ever publication of this illustration of *B. syphillitica*, really *B. balmisiana*, is on the cover of this issue. It was painted in 1789.

Hence, with these the same, and—as we now know—*B. balmisiana* by far the earliest published name, *B. balmisiana* is the correct name for this species.

Also part of this story is *Begonia velutina* Brongniart ex Neumann, sent from Mexico by Ghiesbreght and published in *Revue Horticole* in 1844. As Rudolf Ziesenhenne pointed out in 1971 when I was trying to track this one down, the illustration is like those of *B. balmisiana*, although have not been able to see a *velutina* type specimen. I believe this *B. velutina* must be the *velutina* of the Berlin Botanical Garden listed by Klotzsch in 1855 as equal to *Knesebeckia balmisiana*. (It clearly is a different plant from the *velutina* of the Vienna Garden cited as equal to *B. lobata* of Brazil and also from the *B. velutina* Parish ex Kurz, 1873, that equals *B. parvulifera* A.DC. of Burma, ac-

cording to Clarke in 1879.)

I would accept Brongniart's *B. velutina* as equal to *B. balmisiana*. And other synonyms formerly ascribed to *B. monoptera* now transfer to *B. balmisiana*, as the oldest name.

So we have:

Begonia balmisiana Balmis, Demostr. 338. *pl. 2.* 1794.

Begonia balmisiana var. *mitellifolia* A.DC., Prod. 15(1): 308. 1864.

with synonyms:

Begonia populifolia H.B.K., Nov. Gen. et Sp. 7: quarto 142, *pl. 643.* 1825.

Begonia monoptera Link & Otto, Ic. Pl. Rar. *pl. 14.* 1828.

Begonia velutina Brongn. ex Neumann, Rev. Hort. II, 3: 218 & facing *pl.* 1844. non Hort. Vindob. ex Kl., non Parish ex Kurz.

Begonia velutina Hort. Berol. ex Kl., Begoniac. 40. 1855, pro syn.

Begonia reniformis Pavón ex A.DC., Prod. 15(1): 308. 1864.

Begonia syphillitica Sessé & Mociño, Pl. Nov. Hispan., ed. 1: 162, 1890.

Knesebeckia balmisiana Kl., Begoniac. 48. 1855.

Knesebeckia monoptera Kl., Begoniac. 48. 1855.

Notes, in addition to the above listed literature:

Clarke, C. B., *B. velutina* Parish ex Kurz in J. D. Hooker, *The Flora of British India* 7: 640-41. 1879.

Daveau, J., *B. balmisiana* in *Revue Horticole* n.s. 11: 42-43, fig. 13. 1911.

Divito, Juan C. A., *Las Expeditiones Cientificas Espanols durante el Siglo XVIII*, 386, 419. 1968.

Engstrand, Iris H. W., *Spanish Scientists in the New World: The Eighteenth-Century Expeditions,* especially pp. 39-42, 178-85. 1981.

Lindley, John; & Paxton, Joseph, *B. monoptera* in *Paxton's Flower Garden* 3: 104, fig. 282. 1853.

Smith, Lyman B., & Schubert, Bernice G., "Studies in the Begoniaceae—I," in *Contributions from the Gray Herbarium* 154, 27-31. 1945.

Stafleu, Franz A., *Taxonomic Literature,* 443-44. 1967.

Photos:

B. balmisiana var. *mitellifolia* A.DC., Ghiesbreght no. 221, Field Museum of Natural History, negative 38517.

B. monoptera Link & Otto, Hort. Berol., Field Mus. Nat. Hist. neg. 20918.

B. populifolia H.B.K. type, Paris Museum, photo A. Lourteig in U.S. Herb.

Sessé & Mociño specimens, Field Mus. Nat. Hist. negs. 41497, 41516, 41517, 41522, and 41523.

More Forum

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tapes. The two taped programs are quite good. Some of the slides in the programs are not of high quality and others are quite good.

I ask each branch to designate a person to collect slides and send them to me so I can assemble some new programs. You and your branch will receive recognition for donated slides. Members-at-large who donate also will be recognized.

Please identify the plants in your slides, if possible.

By sharing, we will stimulate others to grow better begonias. Members will see plants they have never seen before. The shows will illustrate how begonias grow in varied geographical areas under ideal and difficult conditions.

Growing begonias and shade-loving plants is what this society is all about. Sharing your pictures with others in different parts of the country will help to share our growing experiences with other members of our society.

If the 2,500 ABS members each sent in only a few slides, we would get more than 5,000 slides of begonias. Now I ask you, wouldn't that be a great start toward a very good slide library for your viewing?

To obtain a descriptive list of the 13 programs now available from the slide library, send a stamped, self-addressed envelope to the energetic Dan Haseltine at 6950 W. Nelson St., Chicago, IL 60634.

Curling, whirling, dancing leaves —it's B. 'Whirlwind', naturally

Thelma O'Reilly

This beautiful cultivar, along with dozens of other young begonia plants, was acquired when I visited Woodriff's "Fairyland" in 1976.

It grew rapidly. The thickly curling, whirling, dancing movements of the leaf shape suggested its name, *Begonia* 'Whirlwind'. Leslie Woodriff approved this name and it was registered in 1977 (No. 609).

The medium-sized leaves, bright green with a chatoyant glow, are strikingly patterned with maze-like dark, reddish-brown markings. Prominent, fine, eyelash hairs trim the margin. Most of the exquisite leaves have a double spiral which presents a mirror-like image at the wedge-shaped sinus.

Begonia 'Whirlwind' has stood the test of time, proving itself to be hardier under my growing conditions than its parents, *B. strigillosa* and *B.* 'Bokit'. Its appearance suggests it would be a "touchy" begonia to grow but it requires little coddling. I am careful when handling it because the petioles are thick where they are attached to the slender rhizome and snap off easily at the slightest bit of pressure. Heavy watering on the foliage should be avoided because the water is trapped in the leaf folds and sometimes rot results. To avoid these adverse conditions, I recommend growing it in a hanging, shallow container.

Like all of my begonias, it grows in a fast draining, coarse potting mix and is fertilized with a balanced slow release fertilizer at regular intervals.

A prolific, late-spring bloomer, it displays many white, flushed-pink flower sprays. Numerous attempts to hybridize *B.* 'Whirlwind' have produced only a few sterile seed.

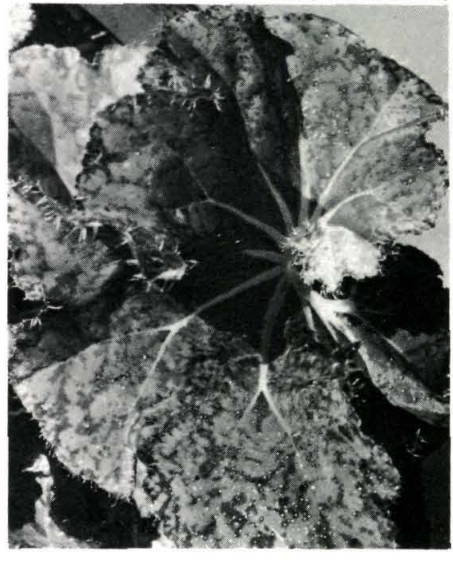
It is a difficult begonia to capture on film. Anticipation has become frustration with all of my efforts. The leaf folds and curls are not only impossible to reproduce but they create shadows overall.

Many new begonia cultivars have arrived and departed in my collection since *Begonia* 'Whirlwind' was added. Along with *B.* 'Fairyland' and *B.* 'Sweet Magic' it remains one of my hardy favorites.

Begonia lover, grower, and writer Thelma O'Reilly lives at 10942 Sunray Place, La Mesa, CA 92041.

In the author's collecton, *B.* 'Whirlwind' displays its curly leaves

Photos/Thelma O'Reilly



A visit to the celebrated Doorenbos begonia collection —and to its learned Dutch keeper

Susan Yamins

In early September 1982, I traveled to Amsterdam, planning to see a few botanic gardens and also to visit the Floriade, the international horticultural exposition that takes place once every 10 years. In addition I hoped to see Professor Jan Doorenbos' famous begonia collection in Wageningen, especially after having read articles by him in *The Begonian* for many years.

Although Dr. Doorenbos had just returned from a two-week trip to Hamburg to attend the International Horticultural Congress, he graciously excused my last-minute phone call, and I hopped on a train to Wageningen early on the morning of Sept. 6. He met me at the train, and we went directly to the agricultural station, where I spent the next three hours completely absorbed in begonias and accompanied by Dr. Doorenbos' wonderful commentary.

The station at Wageningen is part of Holland's Agricultural University, and, as the name implies, the work carried on there is all related to the production of commercial agricultural crops. Various departments at the station deal with such products as fruits, cut flowers, and vegetables. Research is aimed at developing new cultivars, cheaper and faster means of production, new crops, etc.

Dr. Doorenbos is on the horticulture faculty, and he deals specifically with potted plant production. This was quite a surprise to me. Since most of the articles by him that I have read were taxonomically oriented, I assumed this must be his main field of study.

In choosing a subject for potted plant research, Dr. Doorenbos first considers such things as the plant's potential flowering and growth habits, what previous work has been done with the plant, and whether other people currently work on the same crop. These considerations led Dr. Doorenbos to work with cyclamens before begonias and now kalanchoes, a crop he has been dealing with for the past five years. (One plant which has shown much potential is *Kalanchoe farinacea*, a native of Socotra. Dr. Doorenbos has found that it will produce its cluster of brilliant scarlet flowers under long day conditions, the reverse situation needed to induce most kalanchoes to bloom. It will be nice to eventually see species other than *K. blossfeldiana* in the trade)

For 12 years, Dr. Doorenbos actively worked with begonias, attempting to develop new cultivars and to determine the best growing techniques for promising plants. He found that cane-like, rhizomatous, and most other types of begonias produced little in the way of cultivars that could be adapted for the mass market. (Although beautiful hybrids could be developed, I think they must have proven too difficult to produce in large quantities and not rugged enough to endure most home conditions.)

However, work with the Hiemalis begonias did yield promising new cultivars. These selected cultivars were presented to a committee at the Agricultural Univer-

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Susan B. Yamins, a member of the Greater Chicago Area Branch, manages the greenhouses at University of Chicago. She earned a bachelor's degree in math from the school in 1969. Sue wishes to express her thanks to Dr. Doorenbos for his time and kind hospitality and to Mrs. Doorenbos for a delightful lunch and her hospitality as well. "Visiting such an amazing begonia collection and spending time with its founder helped make my trip to the Netherlands an experience to remember," she writes. Sue lives at 7422 S. Coles Ave., Chicago, IL 60649.

sity station at Aalsmeer for further review. (The town of Aalsmeer is also the site of the world's largest flower auction and market.)

Those cultivars finally awarded a certificate from the committee were distributed to growers. The means of distribution varied. In some cases a single grower was entrusted with a new cultivar, in some cases many growers would be given the plant, and in some cases the material could be patented. Some of the cultivars that Dr. Doorenbos bred continue to be popular today and may be seen in many windows in the Netherlands.

The collection of begonias at Wageningen has decreased in number over the past few years in order to make room for the kalanchoe research. However, more than 300 species are still maintained. Dr. Doorenbos keeps species which are currently being used for research and others which are rare in cultivation. He will give up species that are often grown in botanic gardens and collections elsewhere.

There are no cultivars maintained, with the exception of a few plants that have come in unidentified or hybrids which come from seed that has managed to germinate under the greenhouse benches. (This is a rare occurrence, according to Dr. Doorenbos, as there are no insects in the Netherlands that pollinate begonias. Fertilization and the resulting seed set usually occur only after hand pollination.)

Most of the plants in the greenhouse are arranged by their taxonomic section within the genus. In addition to labeling individual pots, each section is also tagged with its name. This arrangement makes it easier to note some of the morphological differences and similarities among plants, even for a casual observer. Taxonomic distinctions start to become meaningful when both the plants and the expert explanations of Dr. Doorenboos are right

Dr. Jan Doorenbos checks on his "brood" in one of the Wageningen greenhouses

at hand.

Building up the collection of begonias over the years is to me one of the most exciting facets of Dr. Doorenbos' work. Plants come in from botanic gardens, private collections, field collections, and many other sources. They may arrive as seeds, cuttings, or rhizomes. All possible techniques will be tried to establish a new find.

When seeds or vegetative parts of a begonia in natural habitat cannot be collected it is worth collecting some of the soil found beneath the plant. When this is sown in the greenhouse it will often yield seedlings of the begonia in question! (It is illegal to bring soil from foreign countries into the U.S.)

Although each plant in this large collection has its own history and importance to Dr. Doorenbos, I did ask if any particular plants were special to him. As we walked by *Begonia acaulis* he remarked that he thought this was the most beautiful begonia to grow as a pot plant, but too touchy to be suited for mass production. Certainly the specimen I saw was a winner, with many rosy flowers held nicely above compact, bushy foliage.

A little further along, at the end of one of the benches, was a begonia with small, pale green leaves climbing up a trellis. This was *Begonia thomeana*, native of St. Thomas Island, and the rarest begonia at Wageningen, according to Dr. Doorenbos. I must admit I could have easily passed by this rather dull looking plant. I think only avid collectors must seek out this begonia!

Despite the fact that Dr. Doorenbos is working primarily with kalanchoe production now, he is still interested in obtaining begonia species rare to cultivation and always keeps an eye out for any promising commercial possibilities. A species collected in Africa with very large yellow flowers, possibly *Begonia scapigera*, is just such an example. The flowers of this plant are on short peduncles and are tucked below the long-petioled leaves. This makes them difficult to see even though they are unusually large. The obvious next step, already proceeding, is to cross this plant with other selected begonias. Dr. Doorenbos is choosing African yellow-flowered species whose leaves have short petioles. The idea is to obtain a hybrid which keeps the beautiful flowers of *Begonia scapigera?*, but display them above compact, low-growing foliage. That will surely be a beauty!

Sometimes, among all the begonias that arrive at Wageningen, species new to the taxonomic literature surface. It seems that New Guinea is one area that still contains a wealth of unknown begonias. Dr. Doorenbos relates a story of two collectors landing at completely different times at a particular airstrip in New Guinea. Each walked briefly around the landing area and both managed to collect seed from five different begonias. They sent samples to Dr. Doorenbos, who germinated them all, and, to his surprise, the seedlings of each collection were different. That's a total of 10 begonias, some being unknown species of striking appearance, as the result of two short walks!

The begonia collection at Wageningen is presently used by several other researchers in cooperation with Dr. Doorenbos. Much of the work is taxonomically oriented. Both pollen and seed studies, using scanning electron microscopes, are producing new information that may be used to help determine relationships within the genus. Dr. J. J. F. E. de Wilde, of the University of Amsterdam, is particularly interested in the African species. He has been able to obtain many begonias directly from habitat, add them to the collection at Wageningen, and continue to study the plants once they become established.

It was quite a sight for me to see approximately a dozen separate field-collected clones of *Begonia squamulosa* right next to one another and all looking substantially different! Dr. De Wilde's task is indeed to determine if one or more than one species is actually present. Experience with plants in the field and close observation of the specimens at Wageningen will allow him to decide if the characteristics which separate the different clones remain constant. If so, additional species or varietal identifications may be warranted.

Work with the living collection has also pointed out some errors in previously published begonia descriptions. As an

example, it has long seen thought that *Begonia eminii* and *Begonia manii* have fleshy fruits that do not open, but instead rot away to free the seeds. At Wageningen, however, both Dr. Doorenbos and Dr. De Wilde have noted that the fruits of these plants do open to release seeds, and these observations may necessitate revision of the plants' descriptions.

What I find most impressive with all this research is that it involves use of a living reference collection and could not be accomplished entirely in the field or by examination of dried herbarium material.

The begonia collection at Wageningen also provides an excellent tool for some of the university classes. Because of the great number of species available, students studying the evolution of plant development can examine this progression first hand in the genus *Begonia*. Each year a different part of the plant is chosen (leaves, flowers, etc.), and then the collection is surveyed by the students who look specifically for evidence of the evolution of the chosen feature.

Being a horticulturist by profession, I am always interested in the growing techniques used at any greenhouse. Maintaining a collection of potted plants for an extended time, as opposed to the continuous production and sale of several crops, seems to me a difficult job. At the University of Chicago, plant collections are generally maintained a minimum of four years while research is actively carried on by doctoral candidates.

Being familiar with some of the problems that can arise in this situation, I was impressed by the health of the begonia collection at Wageningen considering that many of these clones have been in cultivation for at least 10 years. I believe much of the credit here is due to the dedication and hard work of Mr. J. J. Karper. Mr. Karper is Dr. Doorenbos' assistant and actually cares for the collection on a day-to-day basis under Dr. Doorenbos' direction. Although I did not have a chance to meet Mr. Karper, I was able to question Dr. Doorenbos about some of the basics.

My overall impression of the greenhouses, as with most everything else I saw in the Netherlands, was one of a neat and orderly operation. There was not a weed in sight. The begonias were grown in clay pots using a purchased soil medium composed mainly of peat and clay. These pots were sunk to their rims in benches filled with peat moss. The peat around the potted plants helps to keep the medium evenly moist. Also, roots can grow out of drainage holes and into the surrounding peat if the plants become pot-bound. (If you lift a pot out of the bed and find a mass of peat and roots attached to the bottom, it's time to repot.)

All the plants are hand watered as required, and shading material can be pulled across the interior of the greenhouse as the weather dictates. Most of the begonias are grown in the open atmosphere, but there are two sections where the peat benches are enclosed in large glass cases with front ventilation panels. Plants in these areas require high humidity to grow well.

Now for the tough part. To keep the begonias in good condition, the entire collection is rejuvenated from cuttings as often as three times a year! This is an absolute must for the rhizomatous species because they are so susceptible to nematode infestations. The aim of the cutting schedule is to keep the number of nematodes down to a tolerable level. If the population increases enough to seriously damage the plants, more drastic measures are needed. This has happened twice at Wageningen in the approximately 15 years that the begonia collection has been maintained. At these times cuttings of all plants were taken, and the stock pots and the peat in the benches were discarded. While the cuttings were rooting, the empty greenhouse was thoroughly cleaned of pests. Then newly potted plants made from the cuttings and fresh peat were put back in the greenhouse.

The trick here is to have enough space available to house many, many cuttings while an entire greenhouse is emptied and cleaned. Dr. Doorenbos thinks this is a real limiting factor for most botanic gardens. Their greenhouses are so full that there is no free space available to use for a major overhaul. And it is difficult, if not impossible, to clean up a collection in

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Begonia roseibractea, a new species discovered in Mexico

Rudolf Ziesenhenne

Thomas MacDougall's *Begonia* collection number C.241 was discovered on January 11, 1963, at the 4,000-foot level on the south, dry side of the Sierra Madre Mountains above and north of Zantepec, Oaxaca, Mexico. Found among rocks with little shade overhead, the upright rhizomatous begonia, which I am naming *Begonia roseibractea*, was described by MacDougall as rare and novel.

He photographed the plant in its native habitat on February 17, 1969, and also found it in a garden in Oaxaco on December 20, 1969. I received the first living material on February 21, 1963.

The important feature of *B. roseibractea* is its abundance of large pea-green bracts which overlay one another and out of which emerge large, dawn-pink sepaled (2-tepaled) male and female flowers. In the female flowers the largest capsule wing is also dawn-pink but the ovary is dark green, making a brilliant color combination. As the bracts age they also take on the dawn-pink color of the sepals.

In attempting to identify a newly collected *Begonia*, I first make drawings of all the plant parts. After all the parts have been drawn (this may take many years as some plants are slow to produce flowers), the search of botanical literature and comparison with herbarium types begins. During this period of obtaining herbarium material I may begin hybridizing to combine the desirable characteristics with other species. To this date I have crossed *B. roseibractea* with 15 different species.

In March 1964 I received two packets of C.241 (*B. roseibractea*) seed from MacDougall, which were planted and gave excellent germination. At the same time I planted seed of *B.* 'Sunderbruchii' which had been pollinated with pollen from the flowers of the C.241 that MacDougall had sent in 1963. The resulting plants were similar, but I selected the best of the lot and named it *B.* 'Cumbre' after the highest mountain peak overlooking Santa Barbara. This plant, which grows in full sun in Santa Barbara and flowers from January to June, producing on practically leafless stems large cymes of pink flowers 1½-1¾ inches across, was registered with the American Begonia Society as No. 294 (see *Begonian* 39:15 and cover photo. January 1972).

Pollen from *B. roseibractea* also was used on *B.* 'Florida Species' and the best plant was named *B.* 'Santa Ynez' after the mountain range behind Santa Barbara. This plant has thick, fleshy, upright stems, relatively thinner and taller growing than *B.* 'Cumbre'. *B.* 'Santa Ynez' retains leaves while blooming.

Seed of *B. bowerae* var. *nigramarga* pollinated by *B. roseibractea* was planted on July 7, 1973; I named a cultivar from this cross *B.* 'Sulcu' (a Chumash Indian name). This small plant has 5-lobed, deep-green leaves with black along the edges and nerves; the stem is erect and flowers are pink. It was registered as ABS No. 447 (*Begonian* 42:118. May 1975).

Planted at the same time as the above was seed from *B.* 'Norah Bedson' crossed with *B. roseibractea*; the offspring has leaves with dark markings like *B.* 'Norah Bedson', and the flowers are pink with a salmon tinge. I named this plant *B.* 'Moc' (Chumash).

Another cultivar resulted from crossing the unnamed *Begonia* designated by MacDougall as A.245, collected in the season 1958-59, with *B. roseibractea*. A.245 (the prefix "A" instead of "C" for this *Begonia* was not explained at the time of MacDougall's death) has star-shaped leaves entirely covered with long hairs. The seedling was named *B.* 'Helen Grice' for my

Rudolf Ziesenhenne has named and published several begonias discovered by Thomas MacDougall. Rudy resides with his herbarium, his nursery, and his devoted wife Margaret at 1130 N. Milpas St., Santa Barbara, CA 93103.

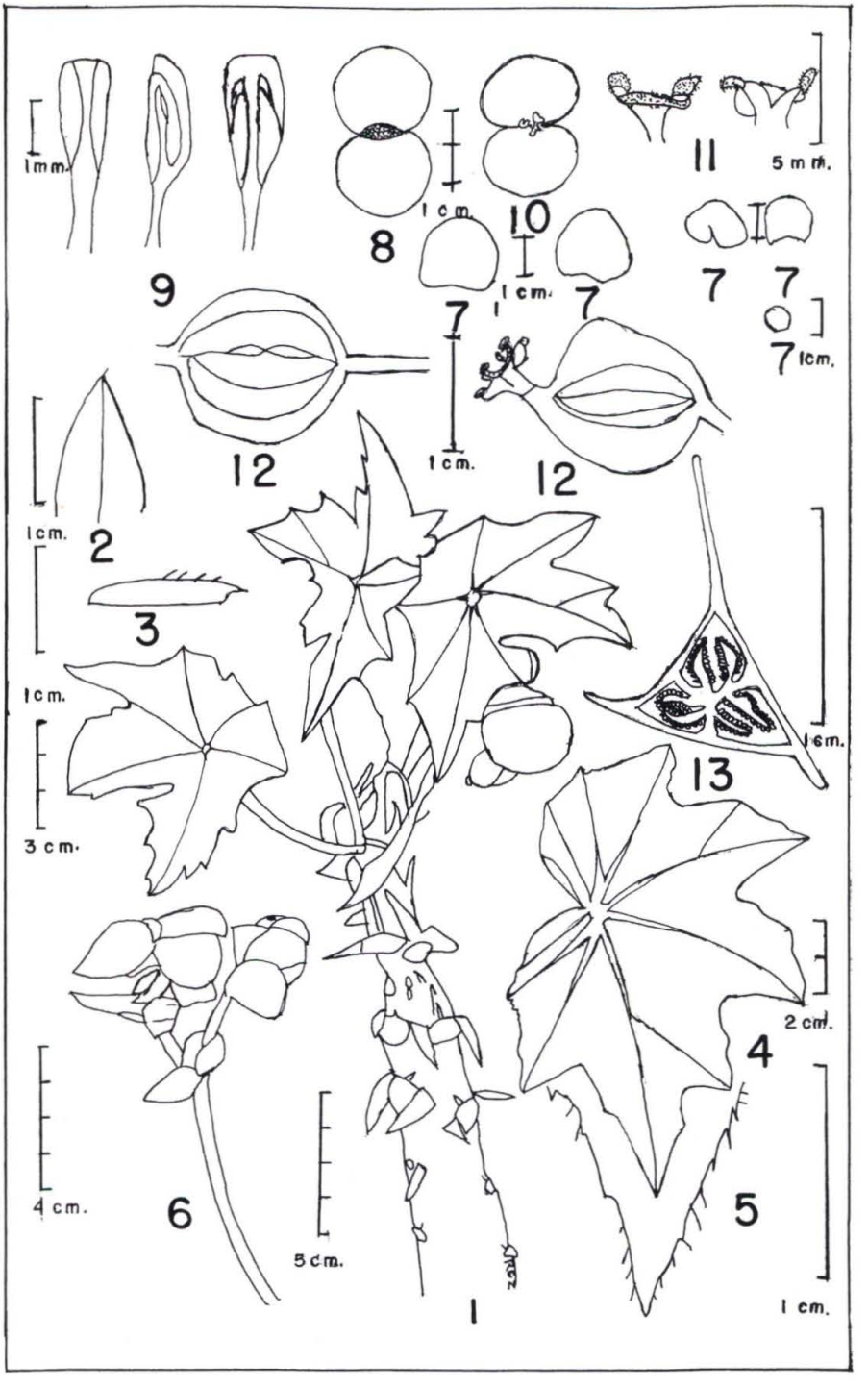
Begonia roseibractea

niece and is very much like A.245 but has an upright growth. This plant is registered as ABS No. 445 (*Begonian* 42:117. May 1975).

Begonia roseibractea is unique and easily identified as different from other *Begonia* species by its large dawn-pink flowers which are wider than long. Perhaps the plant most resembling *B. roseibractea* is *B. kenworthyae*. They differ in that *B. roseibractea* has stout upright stems which quickly become brownish and are covered with small line markings, the stipules are shed, the leaves are 5-lobed and hairy, the inflorescence has bracts which are large, egg-shaped and remain a long time, gradually turning dawn-pink, the anthers are flat at the tip as if cut off, the stigmas are horned, the capsule is necked, the placentas arise off the cell walls.

Begonia kenworthyae has moderately thick upright rhizome-like stems which remain green, the stipules are persistent and are keeled, the keel is irregularly slashed and the tip extends one-eighth inch beyond the stipule, the leaves are 5-lobed and bare, the petiole has an irregular manica (cuff of hair), the inflorescence bracts are pale green and are quickly shed, the anthers are pointed, the capsule is not necked, the placentas arise from the central axis, and the stigmas are not horned.

Begonia (sectione *Gireoudia* [Klotzsch] A.DC.) *roseibractea* Ziesenhenne, spec. nov. Herba perennis; *caule* persistenti, crasso, carnoso, fibris ligneis destituto, erecto, tereti, cicatricibus foliorum torulosis, apice stipulis et foliis tecto, ad 30 cm. elato, 2.5 cm. crasso ad basim, 1.2 cm. crasso ad apicem, non ramoso, apice foliis duobus verticalibus serialibus utrique insertis; *internodiis* 2.5 cm. longis ad basim, 7 mm. ad apicem vel alternatim 7 mm. inferno lixivio, insuper subtiliter reguloso, nodis tumenibus, cicatricibus foliorum prominentibus, lixiviis, obscuris, pilis brevibus crassis basis brunneis ad apice et cicatricibus foliorum pilis marginibus infernic affinibus foliorum insuper gemmis conicis immaturis; *stipulis* persistentibus, papyraceis, inaequaliter ovatis, acutis, integerrimis, 1.5 cm. longis, 8 mm. latis, dilute viridibus, celeriter brunnescentibus, obscuris, nervis basilaribus semi-parallelis et reticulatim ramosis; carina 2 mm. alta, apice projecto ultra paginam 7 mm., margine integro, ciliis 2 mm. longis; *petiolis* teretibus, 6.5 mm. crassis ad basim, 3 mm. ad apicem, 7.6 cm. longis, dilute viridibus, glabris, opacis, villis ferrugineis 3.5 mm. longis et 0.01 mm. latis modice tectis, striis rubis modice tectis, ad folium intus tertiis longitudinis e basi affixis; *foliis* viridibus scheelei, opacis, papyraceis, nervis non prominentibus, rare pilosis, pilis 1 mm. longis basis rubris, subtus pallidis, opacis, nervis prominentibus, parce villosis, villis ferrugineis, 1 mm. paginis modice villosis, villis ferrugineis, 1 mm. foliis tranverse



Begonia roseibractea Zies.

asymmetrice ovatis, acutis, cordatis, margine irregulariter duplocato-serrato ciliato 5-lobatis, lobis asymmetrice triangularibus, acutis, 13 cm. longis, 9.5 cm. latis, palmatinervis, nervis 10, extus basilaribus 2, lateralibus 1, medis 1, intus basilaribus 3, lateralibus 3, interjacentibus planis; *inflorescentia* cyma a Novembre ad Februarium; *pedunculis* teretibus, laevibus, 3 mm. crassis, 12.5 cm. longis, aliis proprietibus petiolorum; *bracteis* deciduis, viridibus, valvaribus, roseis aurorae, late ovatis, obtusis, obscuris, integris, extus pilis paucis; *floribus masculinis* pedicellis ca. 2.5 cm. longis, sepalis 2, roseis auroreae, tenuibus, transverse late ellipticis, obtusis, basi leviter concava, integris, obscuris, 2.2 cm. longis, 2.7 cm. latis; *staminibus* 30, filamentis libris, aequalibus, 1 mm. longis, antheris anguste rectangularibus, truncatis, basi cuneata, 2 mm. longis, 1 mm. latis, connectivo non producto; *sepalis femineis* 2, roseis aurorae, transverse late ellipticis, obtusis, basi recta, integerrimis, obscuris, 2 cm. longis, 2.8 cm. latis; *stylis* 3, modice 2-cornutis, basibus connatis, fascia papilosa semel spiraliter torta, inferne continua cinctis; *capsula* nuda, 1.5 cm. longa, 1.5 cm. lata, triangularis, inaequaliter trialatis, ala maxima rosea aurorae, rotundata, obtusa, ceteris marginalibus, viridibus; *ovario* elliptico, obtuso, 3-loculari, in quoque loculari placentis 2, separatis, parietibus affixis, undique ovuliferis. *Typus MacDougall No. C.241*, in herbario Rudolf Ziesenhenne, 1130 N. Milpas St., Santa Barbara, CA 93103, U.S.A.

C.241. Dry side of the Sierra Madre, between rocks, at ±4,000 ft. above Zantepec, Oaxaca, Mexico, 1971; part shade.

Begonia (section *Gireoudia* [Klotzsch] A.DC.) *roseibractea* Ziesenhenne, new species, herbaceous perennial: *stem* (figure 1) persisting, thick, fleshy, lacking woody fibers, erect, cylindrical, base bare, tip covered with stipules and leaves, to 12 inches tall, 1 inch in diameter at the base, ½ inch in diameter at tip, not branching, foliage at the tip inserted in two vertical rows one on each side of the stem, alternating from one side to the other, internodes at base 1 inch on a side, above ½ inch on side, smooth, lower stem grayish with brown, upper stem brownish with green, finely rough, lenticels not visible, swelling at nodes, leaf scars prominent, gray-brown, dull, with short thick basal brown hairs at tip and bordering lower margin of leaf scar, falling quickly, small cone-like projections of dormant buds above each leaf scar; *stipules* (figure 2) remaining, thin, papery, uneven egg-shaped, coming quickly to a point, even, ⅝ inch long, ⅜ inch wide, pale green, quickly drying and turning brown, dull, nerves basally semi-parallel and branched, keeled (figure 3) with the tip projecting beyond the margin ¼ inch, top edge bordered with a few hairs ⅛ inch long; *petiole* cylindrical, tapering, ¼ inch at the base, ⅛ inch at tip, 3–4 inches long, light green, smooth, dull, moderately covered with brownish long hairs when young, moderately covered with red striations, affixed to the inner side of the leaf at a third of the length from the base of the leaf; *leaf blade* (figure 4) papery, above Scheele's green (860/2), dull, smooth, nerves not prominent, thinly covered with minute hairs with red bases, below slightly lighter green, smooth, dull, with nerves standing out slightly, covered with rusty brown hairs 1/32 inch long, between the nerves moderately covered with rusty-brown hairs up to 1/32 inch long, transversely uneven egg-shaped, sharp-pointed (figure 5) with heart-shaped base, margin doubly and irregularly saw-toothed with hairs protruding from margin, 5-lobed, the lobes unevenly triangular with sharp-pointed tips, the blade 5 inches long, 3¾ inches wide, palmately 10-nerved, outside basally 2 nerves, laterally 1, median 1, inside basally 3, laterally 3, area between nerves level; *inflorescence* (figure 6) a cyme in winter; *peduncle* (flower stalk) from the leaf axil, cylindrical, smooth, 5 inches long, ⅛ inch in diameter, as with petiole; *bracts* (figure 7) finally falling, pod-green (061/3), part exposed to light dawn-pink (523/3), broadly ovate, tip rounded, dull, margin even, few short hairs outside; *male flower* (figure 8) pedicel about 1 inch long, sepals 2, dawn-pink (523/1), thin, transversely broadly elliptic, tip rounded, base slightly concave, ⅞ inch long, 1½ inch wide, margin even, dull, bare; *stamens* (figure 9) 30, filaments free, of equal length, 1/32 inch, anthers narrowly oblong, tip straight as if cut off, base wedge-shaped; 1/16 inch long, 1/32 inch wide, connective not produced; *female flower* (figure 10) sepals 2, dawn-pink, transversely broadly elliptic, tip rounded, base straight, margin quite entire, dull, ¾ inch long, 1⅛ inch wide; *styles* 3 (figure 11) each moderately 2-divided, base united, the band of stigma papillae making one turn around arms and stigma; *capsule* (figure 12) bare, 3-winged, largest wing pink, rounded with a blunt tip near the stigma end, which descends straight to the ovary, other two wings marginal, Scheele's green; *ovary* (figure 13) elliptical, ends rounded, Scheele's green, bare, 3-celled, 2 placentas in each cell, separate and affixed to cell wall, each carrying seed on all sides.

ROUND ROBINS/ *How to handle moving day*

Mary Harbaugh

When a begonia grower has to move long distances it is very difficult financially and emotionally to part with our collections. So we take them with us and hope they adjust to a new climate and growing conditions.

A couple of years ago Doug Hahn was transferred from Cincinnati, Ohio, to Madisonville, Ky., and attempted to move his entire collection intact. As a result of his experience, he does not recommend that others try it. After watching his plants slowly decline following the move he recommends taking cuttings and moving those along with some very special specimen plants. He ended up taking cuttings anyway in an attempt to save those plants he had moved.

Recently, Joyce Smith moved from the Washington, D.C., area to the swamps of Georgetown, S.C. It was a big adjustment for Joyce as well as her plants. The plants took the trip well but shortly after arriving were attacked by mildew. The humidity was extremely high and it rained almost daily.

After a period of adjustment, however, most are now thriving, including those she could only grow in terrariums before such as *B. prismatocarpa.* She had them outside and the garden is heavily shaded with pines and oaks draped in Spanish moss. A few begonias rotted and Joyce has been busy transplanting others from plastic to clay pots so they can dry out.

Preventing mildew

Betty Davenport of Pasco, Wash., was taught in her Master Gardener class that once mildew enters a leaf it is hopeless. Spraying with a fungicide must precede the attack on a leaf.

In the past this has been true but, as Bob Ammerman of Vista, Calif., reports, times have changed. He says that he usually has a lot of mildew around but he thinks he has finally licked it with Ortho Funginex. It is a liquid and easy to use. Bob sprays about every other week and since he started he hasn't had any damage from mildew. He is also using it on fern spore flats and seedlings and it looks like it is going to work very well. Several flats threatened by a fungus were saved as were seedlings that started to damp off.

Frances Hoffman of Northport, N.Y., found that circulating air by means of a fan, even if the air is cold, seems to prevent mildew from taking hold in her greenhouse.

Growing seeds and spores

Dora Lee Dorsey, Tampa, Fla., says that her latest method for growing seed and spores involves using large plastic soft drink bottles. Take the bottom off by putting hot water in the bottle to soften the glue. Cut the top off just above the shoulder where it tapers. A hot knife is good for this. After planting in the bottom, in which she has poked a drain hole, Dora sets it into a saucer or bowl such as a margarine tub. Over this she puts the bottle.

The tapered end lets it fit inside the bottom snug enough that it stands up and the bowl underneath will catch drips or hold water to be drawn into the soil for constant moisture. To add ventilation use a hot ice pick or screwdriver and burn a hole into the top. This set-up can also be used as a small terrarium for starting young plants. Under grow lights germination is rapid and easily observed.

Lorraine Simmons, Janesville, Wisc., found another way to use plastic soft drink bottles. Take the top part that is cut off, turn upside down, put a large cork or plug in the hole, make three holes in the top edge and hang for a planter.

Charline Franklin of Longview, Tex., has gotten excellent germination from the seed fund seed. She uses 2½-inch pots

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Information about joining a robin—a packet of letters circulated among begonia lovers—is available from Mary Harbaugh, round robin director. Write to her at W2899 Homewood Ave., Shawano, WI 54166. Please include a self-addressed stamped envelope.

During conversations at the Santa Cruz convention, one interesting comment repeated several times was that many of you who are not Round Robin members faithfully read this column. Often it is the first thing you read when you receive The Begonian, *and you depend on it for your basic growing information. This included branch members as well as members-at-large.*

I am pleased that we can be of service to such a widespread segment of our society. I welcome your suggestions on how we can improve and expand our service.

Robin members had a few ideas for improving the robin flights and their points are well taken:

1) More discussion relating to begonias and the flight topic. A little bit of personal chatter is fine but it shouldn't monopolize the letter;

2) Answer questions. If you don't know the answer, say so but don't ignore the question completely; and

3) Type your letters, if possible, or write as legibly as you can. So, look over your next letter and see if there are some improvements you can make.

Many of our newest robin members have joined because they are looking for a way to keep in closer touch with the society since The Begonian *has gone bimonthly. The robin program is one of the privileges that comes with your membership. If you are interested in making new friends and learning more about begonias, consider joining a Round Robin and getting your money's worth!*

—Mary Harbaugh

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with about half-inch of perlite in the bottom and Redi-Mix sifted through a flour sifter to within an inch of the top. The pots are set in a solution of half-strength benomyl, half-strength vitamin B-1 plus, and half-strength 15-30-15. She soaks them at least overnight and then drains for the same amount of time. After seeding she puts them in terrariums made of plastic soft drink bottles.

When Dottie Lillestrand of Bloomington, Minn., is sowing fine seed she folds a piece of white paper, puts the seeds in the crease, and gently taps the seeds into the growing medium.

King Langenberg, Waukegan, Ill., has found a useful accessory for transplanting seedlings. It is a tray insert for a standard 1- by 3-foot plastic flat but instead of the usual six pack type wells, this insert has a series of 24 long and narrow troughs which he finds to be perfect for transplanting very young seedlings for the first time. He cut the insert down somewhat so that it would fit into a clear plastic sweater box. After transplanting he puts them under fluorescent lights. Within only two weeks the seedlings had one inch diameter rootballs and were ready for their next move to individual 2½-inch pots.

Joyce Smith grows her seeds under lights, using one of the special seed planting mixes. "I put it in 9- or 12-space market packs, soak them thoroughly, and then heat them in the microwave just until some steam shows. One corner of the seed pack always seems to melt a bit. I plant a few seeds in each square, lay a bag loosely over the top, and put under lights. Each square has a little label in it. I transplant as soon as possible, when the plants are very tiny, into small trays of the same seed mix but with about half perlite added. They usually take right off." Joyce also adds that seed that takes a very long time to germinate never does well for her.

Cane tips

Mildred Swyka of Middletown, Del., gave some personal observations on a few of her canes: "When you get *B.* 'Sophie Cecile' growing good—don't move her, she will protest. Don't overwater her, either. *B.* 'Barbara Ann' can hold buds for months without opening until you give her the front spot in a sunny window. *B.* 'Martha Floro' is my thirsty one. If I gave any other cane as much water as she gets, it would rot, but to keep her growing she must be moist at all times."

SEED FUND/ *B. 'Winter Jewel'—it needs a terrarium*

Joy Porter, director, Clayton M. Kelly Seed Fund

J-F 1 — *B.* 'Winter Jewel' syn. *bartonea* hort.: Small shrub-like species (8-12 inches) grown for many years in ABS, but not known to be named and published. Glossy light red zig-zag stems, grooved petioles, and peduncles contrast pleasantly with the olive green leaves whose red underneath is darker at the center, making a dark pattern on the leaf above. Large white bristles decorate leaf surface. Tiny flowers in winter are deep pink in bud, much lighter when open. Terrarium care. See illustration. ..... per pkt 1.00

J-F 2 — *B. oxyspermum*: Formerly U021. See the August 1980 *Begonian*, page 217, and January-February 1982 issue, pages 4-5, to see Mabel Corwin holding this Philippine species. It is a climbing type with large clusters of orange flowers. It was a difficult labor of love for Mabel to produce this seed for the Seed Fund as the male flowers do not open. Allow 20-30 days for germination. ..... per pkt 1.00

J-F 3 — *B. violifolia*: Small rhizomatous species from Mexico with large green bubble-textured leaves shaped like those of the violet. White half-inch flowers on 5-inch peduncles adorn the plant in summer. Has elbow-like runners, as do the *pustulata* and *imperialis* species. Terrarium care. Small amount of seed. ..... per pkt 1.00

J-F 4 — *B. metallica*: Hairy, wide-leaved, shrub-like species with olive green lobed leaves with bronze luster. Leaf underside is red with white hairs on prominent veins. Pink flowers with pink hairs in fall. Small amount of seed. ..... per pkt 1.00

J-F 5 — *B.* U008: Small shrub-like species with round-oval green leaves, wine-red below fading to green near the margin. All plant parts, including the white flowers, are covered thickly with white wool, which turns a rose color in full sun. As with all hairy types, too-wet conditions are fatal. This seed was hand-pollinated. ..... per pkt .50

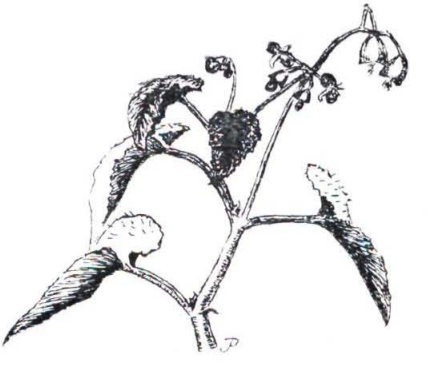
J-F 6 — *B.* 'Glamour Rose Picotee'..... per pkt .50

J-F 7 — Rhizomatous hybrids, spiral leaf types. ..... per pkt. .50

J-F 8 — Tuberhybrida: white with peach picotee edge, white with pink edge, yellow with red edge, red standard, yellow standard, and orange basket types. These will not be mixed. Order separately..... per pkt .50

Send orders to Joy Porter, 9 Bayberry Lane, Framingham, MA 01701. Include self-addressed, stamped envelope or add 40 cents for padded, hand-cancelled package. Massachusetts residents add 5% sales tax. Checks and money orders should be made payable to: Clayton M. Kelly Seed Fund. Foreign orders: U.S. funds only and add $1.20 for postage.

Drawing/Joy Porter



B. 'Winter Jewel', syn. *bartonea* hort.

QUESTION BOX/ *The secret to good tuberous begonia mix*

Mabel Corwin

Question: Last year was my first attempt at growing begonias. Since our summer evenings can become quite cool, I planted my tuberous bgonias in clay pots so they could be easily moved to a warm place if necessary. I started the tubers in a box of peat moss and vermiculite and then transplanted them into clay pots using a commercially prepared African violet soil. I do not believe the mix was quite right.

Would you please recommend a mix that would do a good job? I prefer a commercial product that is ready to use. If a commercial product is not available, perhaps you could give me a formula for a mix suitable for clay pots.

Answer: The one thing that all tuberous growers seem to agree on is that the soil should be "light and loose." I wonder if your mix was mostly peat moss, and perhaps too heavy. Is good leaf mold available in your area? If so, I think you should incorporate some of that in your mix—also some perlite to lighten the mix.

I like to start with a good commercially prepared mix and add these other ingredients until it has the right feel. Since I don't know which brands are available in your area, I can't help you there. I suggest trying several different kinds until you find the one that seems to work for you. I have sometimes combined two different mixes to get the "feel" that I like.

It seems each grower must experiment to find the best mix. It would be interesting to try two different mixes and compare results.

Question: Will you please give me specifications for building a lath house, and the best place to locate it in my yard?

Answer: I have two important suggestions for a lath house. The first is to make it as high as possible. Ours is 10 feet high. We used two 4-foot and one 2-foot lath for height. This height gives a much better climate inside than the usual 8-foot one that is most often used.

The other suggestion is always run the lath on top north and south. This varies the shade pattern inside as the sun moves from east to west. The distance between the lath is determined by the heat of the sun in your area and what you plan to grow. A general rule is to leave a space the width of a lath. It should be placed in an open area in full sun.

Have you ever considered shade cloth instead of lath? I feel this gives a better growing climate. You build a frame as for lath, but staple the shade cloth onto it instead of nailing the lath.

The shade cloth comes in different densities from about 50% to 90% shade. The weight you use is determined by the heat of the sun in your area and the winds of plants you are growing. I use 60% or 70% for begonias. I get much better growth and bloom if they get as much light as they can tolerate without burning.

Question: What varieties of begonias would you recommend in small terrariums in a small condo with not too much space or light? My wife is interested in growing something that blooms more or less continually to add a spot of color during the winter. Begonias were suggested as being one type of plant which would not require direct sunlight.

Answer: There are a number of begonias that should do well in terrariums for you. The first that comes to mind is *B. prismatocarpa*. It stays small and is everblooming. It has tiny, oval green leaves with a satiny sheen. The small flowers are bright yellow.

Another lovely terrarium plant is *B. quadrialata*. It has medium-size peltate leaves. They are emerald green with a lovely sheen. The flowers are yellow-orange color. This plant grows larger than *B. prismatocarpa* and needs a larger

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Send questions about begonia growing to Mabel Corwin, 1119 Loma Vista Way, Vista, CA 92083. Include a stamped, self-addressed envelope; you'll get a prompt reply.

In memoriam

"Mac" MacIntyre

Malcolm L. "Mac" MacIntyre, the Scottish begonia enthusiast and hybridizer from Holmes Chapel, Crewe, England, died Jan. 2 of a heart attack. He had been suffering from angina for two months.

In an article he wrote in the June 1980 *Begonian*, Mac recalled that he became interested in begonias in 1962, when he saw an advertisement for the "trout begonia" (*B.* 'Argenteo-guttata'). "Being an ardent trout fisherman, I had to have it," he wrote.

He joined ABS and began collecting seed from the Clayton M. Kelly Seed Fund. He shared rare species he grew with the Kew and Edinburgh Royal Botanic Gardens.

He hybridized at least 42 begonias, including *B.* 'Maxwelton', *B.* 'Many Colors', *B.* 'Fred Bedson', *B.* 'Red Spider', *B.* 'Mac's Gold', and *B.* 'Mac MacIntyre'.

Mac was a member of the ABS research department for several years and contributed regularly to the seed fund. He also sent cuttings to many ABS members with whom he corresponded.

In a note informing Mildred Thompson of Mac's death, Mrs. MacIntyre said, "his begonias were the chief pride of his life."

Frances Goss Estrada

Frances Goss Estrada, wife of ABS Past President Gilbert Estrada, died Jan. 19 of

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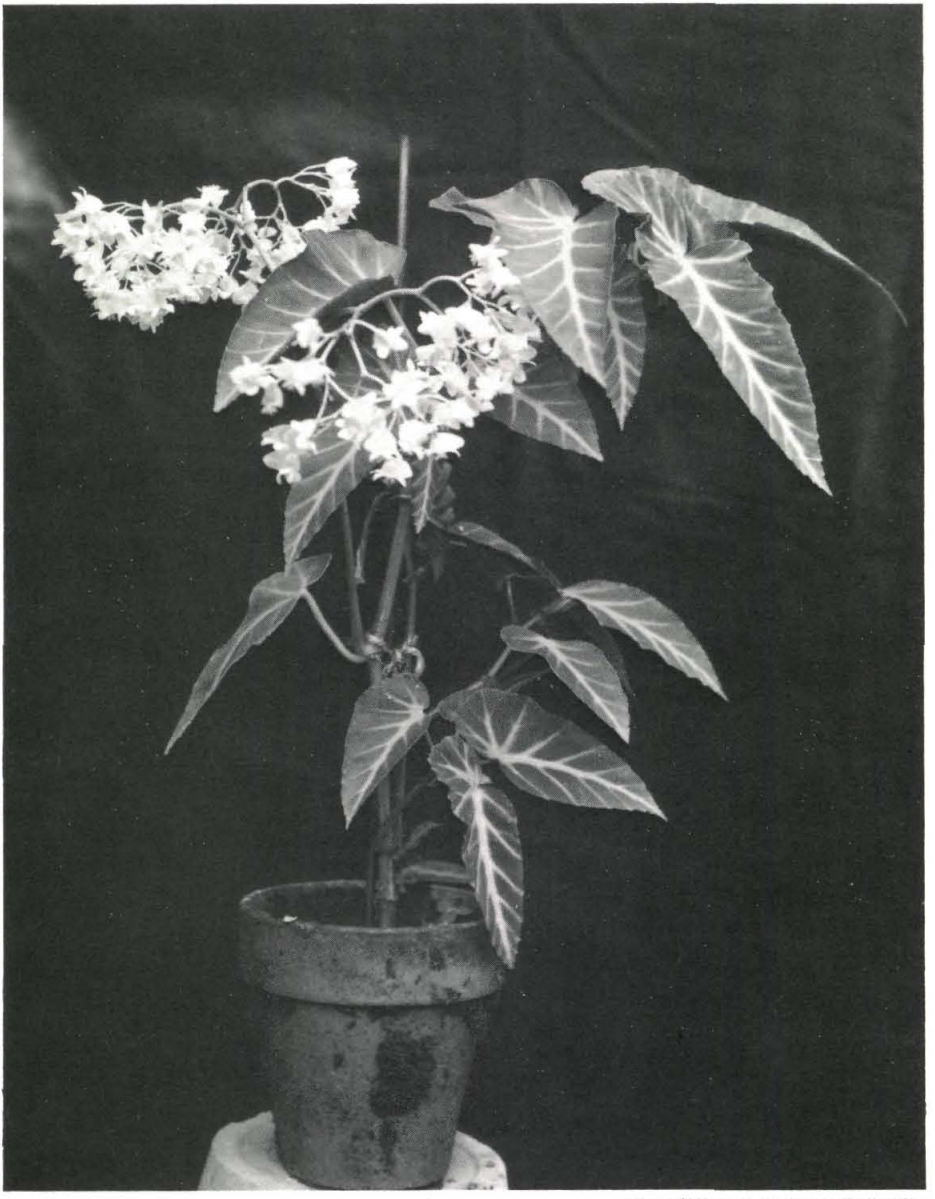
Begonia gallery: tall cane-like B. compta



Photo/Alfred D. Robinson Collection

Dramatic leaf coloration in green and gray gives *B. compta* a crisp look. This tall cane-like species from Brazil, named in 1886, is reputed to be a sparse bloomer, but San Diego nurseryman Alfred D. Robinson brought forth these large white flower clusters early in this century.

ASSOCIATED GROUPS/ *Visitors always welcome*

Arizona

DESERT BEGONIA BRANCH
Mary Church, Pres.
1090 E. Grant Rd.,
Tucson, AZ 85719
Barbara Rogers, Natl. Dir.

California

ALFRED D. ROBINSON BRANCH
2nd Tuesday, 10:30 a.m.
Homes of members
Betty Bauhan, Pres.
5630 Bellevue Ave.,
La Jolla, CA 92037
Margaret Lee, Natl. Dir.

CENTRAL SAN JOAQUIN BRANCH
Mary L. Lane, Pres.
19239 Road 232, Strathmore, CA 93267
Esther Passet, Natl. Dir.

EAST BAY BRANCH
3rd Thursday, 7:45 p.m.
Northbrae Community Church, Berkeley, Calif.
Milton Watt, Pres.
119 Kenyon Ave.,
Kensington, CA 94708
Helen Myers, Nat'l Dir.

GARDEN GROVE BRANCH
3rd Thursday, 7:30 p.m.
Woman's Civic Club,
9501 Chapman Ave.,
Garden Grove, Calif.
Arthur Monday, Pres.
12881 Sylvan, Garden Grove, CA 92645
George Allison, Natl. Dir.

GLENDALE BRANCH
2nd Tuesday, 8:00 p.m.
Glendale Federal S & L,
401 N. Brand, Glendale, Calif.
Helen Baker, Pres.
1832 N. Ontario St.,
Burbank, CA 91505
Katharine Alberti, Natl. Dir.

LONG BEACH PARENT CHAPTER
2nd Sunday, 1:30 p.m., Great Western S & L
6330 E. Spring St., Long Beach
George Ghiotto, Pres.
702 Sunrise Blvd., Long Beach, CA 90806
Florence Hess, Nat'l Dir.

MONTEREY BAY AREA BRANCH
4th Wednesday, 8:00 p.m.
New Monterey Neighborhood Center
Lighthouse and Dickman Sts., New Monterey, Calif.
Raymond Peterson, Pres.
192 Walker Valley Rd.,
Castroville, CA 95012
Leslie Hatfield, Natl. Dir.

NORTH LONG BEACH BRANCH
2nd Tuesday, 7:30 p.m.
Mercury S&L
4140 Long Beach Blvd., Long Beach
Edith Van Landingham, Pres.
6925 Lime Ave., Long Beach, CA 90807
George Ghiotto, Natl. Dir.

ORANGE COUNTY BRANCH
2nd Thursday, 7:30 p.m.
Fullerton S & L, 2310 E. Lincoln Ave., Anaheim
Barbara Vallejos, Pres.
1021 Cardiff,
Anaheim, CA 92806
Sandy Sandoval, Natl. Dir.

PALOMAR BRANCH
2nd Thursday, 7:30 p.m.
Glendale Fed'ral Savings & Loan
Katherine Belz, Pres.
2767 High Mead Circle,
Vista, CA 92083
Patrick Worley, Natl. Dir.

This directory appears every other issue. If your listing is incomplete or inaccurate, please notify the secretary immediately and send a copy of your letter to the editors.

RUBIDOUX BRANCH
4th Thursday, 7:30 p.m.
West Riverside Memorial Auditorium
4393 Riverview Dr., Rubidoux
Claire Husted, Pres.
13580 Indiana, Corona, CA 91720
R. H. Terrell, Natl. Dir.

SACRAMENTO BRANCH
3rd Tuesday, 7:45 p.m.,
Garden Center
3330 McKinley Blvd.,
Sacramento, Calif.
Joan Coulat, Pres.
4111 De Paul Ct.,
Sacramento, CA 95821
Marvin Vipond, Natl. Dir.

SAN FRANCISCO BRANCH
1st Wednesday, 8:00 p.m.,
Garden Center
Golden Gate Park, 9th Avenue and Lincoln Way
Carol Spediacci, Pres.
1189 Glenwood Dr.,
Millbrae, CA 94030
Dolores Dupre, Natl. Dir.

SAN GABRIEL VALLEY BRANCH
2nd Tuesday, 7:45 p.m., Los Angeles State and County Arboretum
301 N. Baldwin Ave., Arcadia, Calif.
Linda Proctor, Pres.
201 N. Sunset Pl.
Monrovia, CA 91016
Louise Best, Natl. Dir.

SAN MIGUEL BRANCH
1st Wednesday, 7:30 p.m., Casa del Prado, Rm. 104, Balboa
Juana Curtis, Pres.
4107 Taos Dr., San Diego,CA 92117
Bob Ammerman, Natl. Dir.

SANTA BARBARA BRANCH
4th Saturday, 7:30 p.m.
Louise Lowry Davis Recreation Center
1232 De la Vina St.
Dara Emery, Pres.
517 W. Junipero St., No. 2,
Santa Barbara, CA 93105
Kay Willis, Natl. Dir.

SANTA CLARA VALLEY BRANCH
3rd Thursday, 7:45 p.m.
Elisabeth Sayers, Pres.
369 Ridge Vista Ave.,
San Jose, CA 95127
Mary Margaret Rafferty,
Natl. Dir

THEODOSIA BURR SHEPHERD BRANCH
1st Tuesday, 7:30 p.m., Senior Citizens Bldg., 420 Santa Clara St., Ventura, Calif.
Norm Rohn, Pres.
2033 N. Latham,
Camarillo, CA 93010
Mary Stine, Natl. Dir.

WESTCHESTER BRANCH
1st Thursday, 7:30 p.m.
Westchester Women's Club
8020 Alverstone St., Los Angeles
Pat McElderry, Pres.
5137 Inadale Ave.,
Los Angeles, CA 90043
Millie Simms, Natl. Dir.

WHITTIER BRANCH
1st Thursday, 7:30 p.m., Palm Park Community Center
5703 South Palm Avenue, Whittier
Connie Thornburg, Pres.
9535 Nan St.,
Pico Rivera, CA 90660
Billy Scarbrough, Natl. Dir.

Connecticut

CONNECTICUT BRANCH
4th Monday, Homes of members
Arline Peck, Pres.
Eagle Peak Rd., Pascoag, RI 02859
Priscilla Beck, Natl. Dir.

District of Columbia Area

POTOMAC BRANCH
4th Sunday, 2:00 p.m.,
Sherwood Hall Library,
1205 Sherwood Hall Lane,
Alexandria, VA
Maxine Zinman, Pres.
Rte 1, Box 73, Boyce, VA 22620
Linda Record, Natl. Dir.

Florida

JACKSONVILLE BRANCH
3rd Monday, 7:30 p.m.
Agricultural Ctr.,
1010 North McDuff Ave.
Ed Harrell, Pres.
1628 Broward Rd.,
Jacksonville, FL 32218
Mary Harrell, Natl. Dir.

MIAMI BRANCH
4th Tuesday, 8:00 p.m.
Simpson Memorial Garden Center
55 South West 17th Road, Miami, Florida
Dr. James A. McArthur, Pres.
22175 Miami Ave., Goulds, FL 33170
Charles J. Jaros, Natl. Dir.

PALM BEACHES BRANCH
2nd Monday, Home S & L
Opp. Palm Coast Plaza, W. Palm Beach, Fla.
April Foster, Pres.
564 Arlington Dr., W. Palm Beach, FL 33406
Elverna Maley, Natl. Dir.

TAMPA BAY AREA BRANCH
4th Thursday, 7:30 p.m.
Seminole Garden Center,
5800 Central Ave., Tampa
Mary Breit, Pres.
2713 N. B St., Tampa, FL 33609
Marie Van Etten, Natl. Dir.

Illinois

GREATER CHICAGO AREA BRANCH
4th Sunday, except Dec.,2 p.m.
Oak Park Conservatory
561 Garfield, Oak Park, Ill.
Mary Weinberg, Pres.
1527 W. Highland Ave.,
Chicago, IL 60660
Virginia Beatty, Natl. Dir.

Massachusetts

BUXTON BRANCH
3rd Saturday, Mass. Bay Community College,
Rosemary Norton, Pres.
979 South St., Roslindale, MA 02131
Percy Ehrlich, Natl. Dir.

Minnesota

MINNESOTA BRANCH
2nd Wednesday, 7:30 p.m.
Homes of members

Gladys Olmsted, Pres.
1840 Eighth St., Elk River, MN 55330
Thelma Adair, Natl. Dir.

New Jersey

ELSA FORT BRANCH
Helen Green, Pres.
2100 Hunter St., Cinnaninson, NJ 08077
Gladys Cooper, Natl. Dir.

New York

EASTERN NEW YORK BRANCH
Herbert E. Speanburg, Pres.
75 Swaggertown Rd., Scotia, NY 12302

HAMPTON BRANCH
2nd Monday, 7:45 p.m., Parrish Memorial Hall, Southampton, NY
Ed Thompson, Pres.
310-A Hill St., Southampton, N.Y. 11968
Mary Burnaford, Natl. Dir.

KNICKERBOCKER BRANCH
2nd Tuesday, 7:30 p.m.
Horticultural Society of New York
128 West 58th St., New York, N.Y.
Gerald Goodman, Pres.
102-35 67th Rd., No. 5K, Forest Hills, NY 11375
Howard Berg, Natl. Dir.

LONG ISLAND BRANCH
2nd Wednesday, 8:00 p.m.
Planting Fields Arboretum
Oyster Bay, Long Island, N.Y.
Mrs. Martha Graham, Pres.
55 Duryea Rd., Melville, NY 11746
Marie Donnelly, Natl. Dir.

Ohio

GREATER CINCINNATI BRANCH
Verda Stull, Pres.
5 Burnham St., Cincinnati, OH 45218
Erich Steiniger, Natl. Dir.

Oklahoma

FRED A. BARKLEY BRANCH
1st Sunday, 2:30 p.m.
Huey Long Community Center, Del City, Okla.
Merril Calvert, Pres.
11201 Draper, Choctaw, OK 73020
Ruth Wills, Natl. Dir.

Pennsylvania

EDNA STEWART PITTSBURGH BRANCH
3rd Wednesday, 7:30 p.m.
Pittsburgh Civic Garden Center
Suzanne Colaizzi, Pres.
115 Lillian Rd., Pittsburgh, PA 15237
Frank Kerin, Natl. Dir.

WESTERN PENNSYLVANIA BRANCH
2nd Wednesday, 11 a.m.
Ricardo's Restaurant, Butler, Penn.
Antonette Ponteri, Pres.
407 Canterbury Trail, Mars, PA 16046

WILLIAM PENN BRANCH
4th Tuesday, noon, Homes of members
Mrs. Jacques Leroux, Pres.
Dove Lake House, Gladwyne, PA 19035
Mrs. Lancelot Sims, Natl. Dir.

Rhode Island

ROGER WILLIAMS BRANCH
3rd Monday night. Homes of members.
Arline Peck, Pres. & Natl. Dir.
Eagle Peak Rd., RFD #1, Box 478, Pascoag, RI 02859

Southwest

SOUTHWEST REGION
Robert Hamm, Dir.
2951 Elliott, Wichita, Falls, TX 76308

Texas

ASTRO BRANCH
Gloria Quinn, Pres.
234 Tallant Dr., Houston TX 77076

COASTAL BEND BEGONIA SOCIETY
Helen Gonzales, Pres.
Rt. 1, Box 103, Taft, TX 78390

HOUSTON TEXAS BRANCH
4th Monday, 10:30 a.m., Garden Center, 1500 Herman Dr., Houston, Tex.
Nancy Blakeman, Pres.
11838 Bayhurst, Houston, TX 77024
Mrs. Grant Herzog, Natl. Dir.

MAE BLANTON BRANCH
4th Wednesday, 10 a.m.
Homes of members
Mae Blanton, Pres.
118 Wildoak Dr., Lake Dallas, TX 75065
Glennis Crouch, Natl. Dir.

Washington

EASTSIDE BEGONIA BRANCH
4th Wednesday, 7:30 p.m.
590 116th Avenue N.E., Bellevue, Wash.
Nola Emrick, Co-Pres.
730 Renton Issaquah Rd. S.E. Issaquah, WA 98027
Evelyn Rathje, Co-Pres.
4638 36th Ave. W., Seattle, WA 98199

SEATTLE BRANCH
3rd Tuesday, 7:30 p.m., Bethany Lutheran Church, 7400 Woodlawn Ave., N.E.
Dorothy Williams, Pres.
21519 92nd Ave. W., Edmonds, WA 98020
Phyllis Wright, Natl. Dir.

SOUTH SEATTLE BRANCH
4th Tuesday, 7:30 p.m., Wm. Moshier Field House 430 S. 156th St., Seattle
Joanne Slosser, Pres.
16419 3rd Ave., S.W., Seattle, WA 98166
Shel Fisher, Natl. Dir.

More ABS news

From page 26

cardiac arrest, several days after a major operation.

A member of ABS since 1972, she served as ABS historian for five years, until poor health forced her to relinquish the position recently. She had been a member of Redondo Beach and Garden Grove branches and the Long Beach Parent Chapter.

Frances held degrees in music and law from the University of Southern California. She had an early radio program in the Los Angeles area, and she was active in politics in the 1940s. She was born of a prominent family in Gardena, near Los Angeles.

In addition to her interest in begonias, she was an avid collector of fine buttons.

Besides her husband Gil, who currently serves as ABS business manager, she is survived by two sisters, her daughter, Hazel Bailey, and four grandchildren. A memorial service was held Jan. 24 in Downey.

Don't miss an issue . . .

Check address label.

If your membership expires within 3 months, renew today. Send to:

Elisabeth Sayers, membership secretary
369 Ridge Vista Ave.
San Jose, CA 95127

More Doorenbos collection

From page 17

place once it has become infested with serious pests such as soil nematodes.

Cuttings are rooted and seeds germinated in closed propagation boxes that are shaded with newspaper. I was surprised at the small size of seedlings pricked out of their seed pots and planted neatly in larger community pots to grow on. Most had no more than two true leaves and were considerably less than a quarter-inch across. Handling such small plants takes a delicate touch, but I expect they recover from any transplanting shock faster than if left to grow longer in their original pots.

The begonia collection at Wageningen is truly outstanding, and the success of its cultivation is due to the dedication of Dr. Doorenbos and Mr. Karper. Their knowledge of and experience with each plant is irreplaceable. Without this, such a diverse collection of begonias could never be maintained. Dr. Doorenbos is always happy to share cuttings of the collections with botanic gardens and other interested horticultural institutions. In fact, sets of cuttings of the entire collection have gone to several places in the Netherlands and to the University of Hamburg botanic garden in Germany. It was good to hear that the garden in Hamburg has succeeded in establishing most of the cuttings.

Dr. Doorenbos and Mr. Karper will both retire from the university in four years. Before then Dr. Doorenbos is hoping to find time to research the identification of the unknown begonias in the collection. Plans for the long-term future of the collection are undecided. Dr. Doorenbos will probably search for a botanic garden interested in receiving the entire collection as it will be dismantled from Wageningen upon his retirement. I hope the addition of such a large reference begonia collection would interest the botanists, horticulturists, and the public of many botanic gardens. The more institutions willing to maintain such a collection (duplicate cuttings could be sent to several places), the better for all!

BEGONIAN MINI-ADS

Begonia and lily catalog—35¢. Leslie & Winkey Woodriff, Fairyland Begonia and Lily Garden, 1100-B Griffith Rd., McKinleyville, CA 95521. Visitors welcome.

BEGONIAS—all types. Illustrated, descriptive catalog featuring over 700 varieties, many rare and unusual. $1.50. THE THOMPSONS, P.O. Drawer PP. Southampton, N.Y. 11968. 516-283-3237.

THE THOMPSON GREENHOUSE *"A Living Museum of Begonias"* owned and operated by Millie and Ed Thompson. Over 1400 different species and cultivars of begonias are displayed. While in New York plan to visit. HOURS: 9-12 noon Mon., Wed., Thurs., Sat.; 2-5 p.m. Fri. Other times by appointment. Call The Thompsons at 516-283-3237. LOCATION: Southampton College Campus, Southampton, N.Y. Open all year. No admssion fee. A number of small plants are available for sale.

BEGONIAS: ferns, violets, cactus, & more. ATKINSON'S GH, Rt. 2, Box 28, Morrilton, AR 72110. List 45¢. Rooted cuttings, reasonable prices. SPECIAL: 15 begonias $15.95 p.p.

Mini-ads are $1 per line per insertion with a minimum of $4. A line is 38 characters including punctuation and spaces. Payment must accompany order. Send to Susan Muller, advertising manager, 124 St. Charles Ave., San Francisco, CA 94132.

Begonias—violets—episcias. Cuttings only. List 50¢. Springtime Gardens, 2212 Hickory, Sulphur, LA 70663.

Violets - Begonias - Episcias
Cuttings only. Send 50¢ for list.
Wilson's Greenhouse, Route 1
Box 165-4 Ozark, MO 65721

African violets, begonias, gesneriads, terrarium and dish garden minis, cuttings only. Windowsill Gardens, Box 943, Center Moriches, NY 11934. List 35¢.

BEGONIAS: THE COMPLETE REFERENCE GUIDE, by Mildred L. and Edward J. Thompson, 384 pages, 850 illustrations (165 in color). Culture, classification, and history of begonias in one definitive volume. Price $35 (shipping in U.S. included UPS or first class mail). For autographed copies write The Thompsons, P.O. Drawer PP, Southampton, NY 11968. Enclose $35 check or use Master Card or Visa.

ABS 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 which will be mailed to all members of the society.

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

ABS SERVICES

These services are available to all ABS members. For names and addresses of department heads and other officers, see inside front cover. Include a self-addressed, stamped envelope when you write.

AT-LARGE MEMBERS—Services for members who don't belong to branches are handled by the members-at-large director. Contact her for details. If you are interested in finding a branch or starting one in your area, contact the branch relations director for help.

THE BEGONIAN—The journal of the society publishes how-to articles, scientific information, and ABS news. Articles on a member's personal experiences with begonias are welcomed, as are black-and-white photos of begonias and color slides suitable for use on the cover. Contact the editor.

BEGONIAN BACK ISSUES—Individual copies of The Begonian more than a year old are available from the back issue sales chairman (75 cents). A full year is $6.50 for any year in the 1940s. $5 for any year from 1950 through 1980. Back issues less than a year old are ordered from the membership secretary for $2 each.

BOOKSTORE—Books on begonias and related subjects can be purchased mail-order from the bookstore manager. Contact her for a list of books available. The bookstore also sells reproductions of antique begonia prints and other items.

JUDGING DEPARTMENT—The judging department offers a course by mail with which you can learn to become an accredited begonia show judge ($8). Also available are a booklet on point scoring ($1.25), information on fuchsia and fern judging, and other requirements to become a judge. Add $1 postage and handling to all orders and 6% tax for California residents.

LIBRARY—Books about begonias and gardening may be borrowed by mail from the lending library. Contact the librarian for a list of books and the procedure.

NOMENCLATURE — The nomenclature department monitors newly published findings on begonia names as well as handling official international registration of new begonia cultivars. Registrations are published in The Begonian.

QUESTION BOX—Send begonia-growing questions to Mabel Corwin, 1119 Loma Vista Way, Vista, CA 92083. You'll get a prompt answer and Mabel will use questions of general interest in her Begonian column.

RESEARCH—The research department conducts projects periodically. The department also has other activities, including the review of requests for ABS backing of outside projects. For details, contact the director.

ROUND ROBINS—Members exchange information about begonias and their culture through a packet of letters which circulates among a small group of growers. There are dozens of these packets—called flights—on many specialized subjects. To join one or more, contact the round robin director.

SEED FUND—The Clayton M. Kelly Seed Fund offers seeds of begonia species and cultivars by mail. New offerings are listed in The Begonian. Donations of seed are encouraged. Please contact the seed fund director.

SLIDE LIBRARY—A series of slide shows on begonias and begonia growing can be borrowed by mail for showing at meetings and seminars. New shows are under preparation. Contact the slide librarian for fee information.

SPEAKERS BUREAU—The speakers bureau maintains a directory of speakers on begonias and related subjects. Contact the director.

More Question box

From page 25

terrarium.

B. rajah is an interesting terrarium plant that is quite different from the other two. It has medium size reddish-brown leaves. The surface is puckered. The small flowers are soft pink.

These all do well in fairly low light. Terrariums should never be placed in direct sunlight as this will cause the plants to burn.

There are many other varieties that you could grow. I suggest you send for catalogues from the growers who advertise in *The Begonian*. You will find pictures and good culture information that will be helpful.

American Begonia Society
369 Ridge Vista Ave.
San Jose, CA 95127

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