

May-June 1986

*The* BEGONIAN

# The BEGONIAN

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Publication of the American Begonia Society

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**American Begonia Society**—P. O. Box 1129, Encinitas, CA 92024-0990

**Membership**—Subscription, dues, circulation inquiries, and address changes: John Ingles, Jr., 8922 Conway Drive, Riverside, CA 92503 (714)687-3728

**Editor**—Phyllis Bates, P. O. Box 502, Encinitas, CA 92024 (619)436-1419

**Advertising Manager**—Jess Martinez, 1770 Foothill Drive, Vista, CA 92084. (619) 941-0280

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# INSIDE/Two Species Removed From Unidentified List

**The Cover:** Introduced into cultivation in 1980, *B. cumingii* was brought from the Philippines by Martin Johnson. So lovely is it that this story waited until a cover space was available. Its soft orange blossoms are set off by dark green leaves. Millie Thompson accumulated the facts, grew the specimen plant, and photographed it. See her article on page 64.

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## ABS NEWS

### NOMINATIONS FOR ABS OFFICES

The nominating committee offers the following slate for officer for the 1986-7 term:

President:	Margaret Lee
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Second Vice Pres.:	Howard Berg Charles Jaros
Third Vice Pres.:	Tamsin Boardman Ingeborg Foo
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Ballots were sent to all members on June 15.

### MAL NEWSLETTER

Send a stamped, self-addressed stamped business-sized envelope for a copy of the Members-at-Large Newsletter #6 to Thelma O'Reilly, ABS MAL Director; 10942 Sunray Place; La Mesa, CA 92041.

### BUXTON CHECK LIST

Copies of the **Buxton Check List** and all supplements will be available soon. To reserve a copy or get information, contact the Book Store Manager Bob Bailey, 4106 Madrona Road, Riverside, CA 92504.

### IN MEMORIAM

#### George Glenn Lawrence

George Lawrence, president of the ABS in 1947, died in Glendale, Arizona. He was a member of the San Gabriel Branch.



### TROPHY DONATIONS SOUGHT

Thanks to the following branches for donations for trophies for the national convention: Jacksonville, Miami, Palm Beach, Minnesota, Sacramento, Greater Chicago, and Long Beach. There are still unsponsored trophies, so before its too late please send your donation to the Trophy Committee. Make checks payable to the 1986 ABS Convention Fund and mail to Committee Chairman Jeannette Gilbertson, 410 Joann Circle, Vista, CA 92084.

Donations of plants for the plant sale are still welcome. The committee anticipates that it will reach its goal of 6,000 plants if all who have promised plants actually deliver them. Well-rooted cuttings are the only way to pass on most named cultivars. Be sure to label plants carefully.

### OLD SLIDES TO BE SHOWN

Through the cooperation of the San Diego Floral Association and the San Diego Historical Society, slides of Rosecroft Gardens, the home and nursery of Alfred D. Robinson, will be shown at the ABS Convention. These slides were newly prepared from Alfred D. Robinson's original glass slides so that they can be used on modern projectors. Don't miss this wonderful opportunity.

## BEGONIA CUMINGII

Mildred L. Thompson

In May 1981, I received a plant of *B. U105*, an outstanding shrub like unidentified species, from the Kartuz Greenhouses; it was the first time this species had been offered in their catalog. In 1980, Martin Johnson of Redwood City, California collected seeds of this unidentified species on Mt. Banahao in the Philippines. When he returned from the Philippines, Martin organized the propagation of this and other Philippine species that he had collected so that these species could be sold at the ABS National Convention in September 1980. The proceeds of these sales were to benefit the *Begonian*.

In the August 1980 issue of the *Begonian*, this species, before it was given U015 as an identification number, was the second species described and pictured on page 216. In the February 1981 issue of the *Begonian*, it was reported that this unidentified species had been given the American Begonia Society number U015 by the nomenclature committee. On April 2, 1982, Jan Doorenbos wrote me that he identified *B. U015* as *B. cumingii* A. Gray; this information was published in the *Begonian* in the July/August 1982 issue.

**History:** *B. cumingii* was first collected by Cuming in the Majajai Mountains on the island of Luzon in the Philippines; the species was named for the collector.

The original citation of *B. cumingii* written by Asa Gray was published in 1854 in *Botany Phanerogamia* Vol. 1, page 658. This is actually Volume 15 of *United States Exploring Expedition during the years 1838-1842 Under the Command of Charles Wilkes, U.S.N.* Dr. Gray compared the specimen from the Wilkes Expedition with No. 1897 of Cuming's Philippine collection, which at the time was undescribed, and he found that both belonged to the same species.

*Mildred Thompson is continually at work with the newest species in cultivation. Her mailing address is P.O. Drawer PP, Southampton, NY 11968.*



*Begonia cumingii*

Habit of growth

In 1864, Alphonse de Candolle renamed *B. cumingii* Gray *B. philippinensis* A. DC. because of the similarity to the name *B. cumingiana*, a similar but different species; however, in 1911 E. D. Merrill in *Philippine Journal of Science* Vol. 6 on page 384 maintained the name *B. cumingii* according to the interpretation of the precise recommendations of the *Botanical Code*. In 1908, Merrill had published a photograph of the type specimen of *B. cumingii* in the *Philippine Journal of Science* Vol. 3, Plate III.

**Natural Habitat:** According to E. D. Merrill's 1911 work, *B. cumingii* is known only from the mountains of the provinces of Laguna and Tayabas (now Quezon province), in Luzon, the Philippines. Laguna is a province in south central Luzon which now covers 679 square miles. The highest point is Mt. Maquiling (3650 ft) where Merrill collected a specimen of *B. cumingii* in 1909.

**Description:** *B. cumingii* is a striking shrub-like species of moderate height with many basal shoots. It is a semi-erect plant with a fair amount of branching along the dark red stems. The spaces between the nodes are long. Short hairs are heavily scattered along the stems. The medium olive green leaves are ovate and measure on the average  $3\frac{1}{2}'' \times 1\frac{1}{2}''$ ; the base is obliquely cordate and the apex is acuminate (tapering with concave

sides). The leaf margins are somewhat undulate (wavy) and toothed with short white hairs along the edges. All the veins are depressed giving the leaves a slightly puckered appearance. There are five to six red-tinted main veins. The upper surface of the leaves is glabrous (free of hairs). The undersurface of the leaves is silvery green with a heavy red tinting; short hairs are scattered on the undersurface especially along the veins.

*B. cumingii* is everblooming; the amount of blooming, however, is greater from late spring through fall. The peduncles (flower stalks) are shorter than the length of the leaves. The flowers are orange. Male flowers have two widely ovate tepals. The female flowers have five ovate tepals, and there are three styles. The pale green ovary has three nearly equal orange-tinted wings; the base of the wings is truncate (nearly straight across).

**Cultural Requirements:** *B. cumingii* does not have demanding cultural requirements, and it can be grown successfully using the same basic guidelines used for other shrublike begonias. During all seasons, it is preferable to place *B. cumingii* where there is plenty of sunlight for a good portion of the day. In some geographical locations some filtering of the direct sun's rays is necessary during the warmer months of the year. Since this species comes from a tropical area, it is not surprising to learn that it requires sufficient relative humidity with a minimum of around 45% to 50%. It tolerates cooler temperatures very well, but I find that it loses some leaves even though the flowering continues to some extent. The ideal temperature is between 58 and 62°F. It is also wise to place this species where there is good circulation of air in all seasons.

The stems are semi-erect and branching, and, therefore, it is seldom necessary to stake the plant. Because it is not naturally a very compact plant, it is essential to pinch the stems frequently to encourage more branching along the stems. I grow this species in my regular potting mix in either clay pots or moss-lined wire containers; growth is good using either type container, but we prefer the moss-lined wire container because we find that the plant grows into a more symmetrical



Unopened buds are bright orange.

Photos by Millie Thompson

shape naturally. I have found that during the active growing season the root system fills the container rather quickly, and this necessitates repotting frequently; however, I prefer to repot during the spring, summer, and fall because the plant customarily goes into a slightly semi-dormant state in most cases during the winter months. Regular fertilizing is important because the foliage has a tendency to fade without it, and there will be diminished blooming.

*B. cumingii* is one of my favorite species from the Philippines because it is not only colorful and attractive, but also its cultural requirements are not demanding. Thank you to Jan Doorenbos for identifying this species for all of us. Thanks also to Martin Johnson who has brought this species and many of the Philippine species to the United States for all of us to study, grow, and enjoy. My thanks to Carrie Karegeannes for sending me her translation of *B. philippinensis* (= *cumingii*) along with her observations concerning this translation. My thanks also to Kartuz Greenhouses for sending me my first plant of this species in 1981.

# DIARY OF A SEED COLLECTING TRIP IN PAMANA

*Roberto Brin*

According to my theory, when God created the world He decided to link the Americas, His masterpiece, with a very special land; so He molded the Isthmus of Panama, took his pallet and brush, and then painted this new land with the most incredible shades of green.

Besides blessing us with an exuberant “emerald forest,” where for example, on a tiny lake island of only 15 km<sup>2</sup>, there are more tree species than on the whole European continent, He also gave Panama more butterfly species than live in Africa, as well as 850 bird species and, of course, plenty of Nature’s jewels, the *Begonia*.

In order to share our wild treasures with you I decided to make another seed collecting trip, this time to the highlands of Chiriqui. As my partner I invited my 18-year-old son Juan Carlos.

**February 15:** Early in the morning we took the plane and, after an hour’s flight, we landed in David, capital of Chiriqui. There we rented a Jeep. After driving for 40 minutes we arrived at Bambito. The amazing thing about this short drive is that in minutes you are transported from sea level to an altitude of 5200 feet with Swiss-like panoramas and from tropical 90° F. to springlike 60 degrees.

Bambito, at 5210 feet, is located on the slopes of the extinct Baru Volcano (11,484 feet), now a national park where you still can see one of the most beautiful birds of our planet, the quetzal. There we stayed at the Hotel Bambito, a super 5-star hotel with beautiful surroundings, where bird watchers and naturalists from all over the U.S. and Europe like to stay.

**February 16:** Early this morning we took our machetes, an essential, large knife to cut the

*Roberto Brin was a speaker at the Miami Convention. His address is Apartado 7470, Panama 5, Republic of Panama. The seeds he collected on this trip are listed in the Seed Fund this month.*

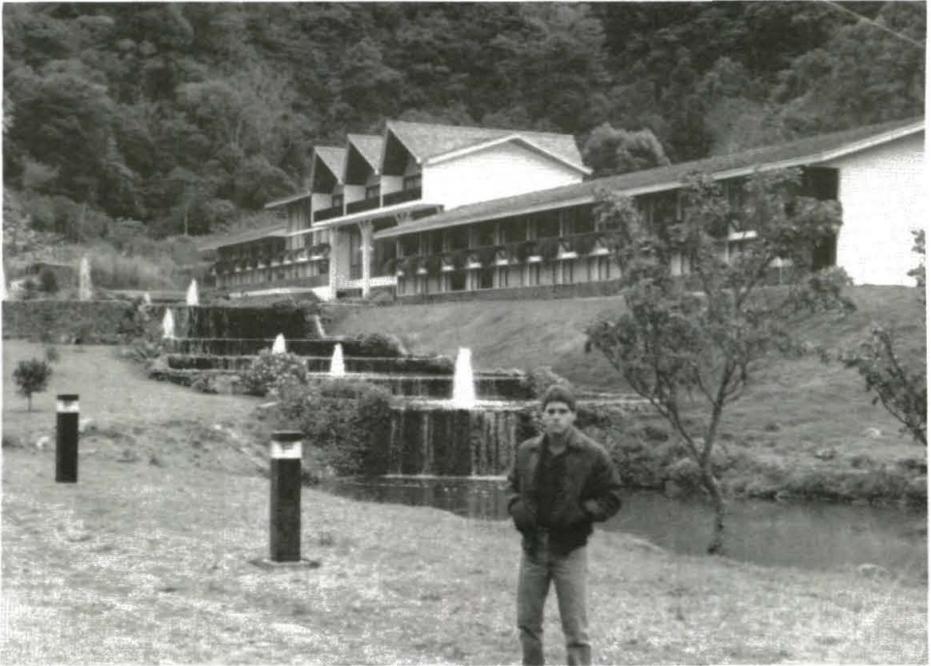
jungle or snakes, and with our local friend, Ivan De La Guardia, we drove to the Lagunas (lagoon) of Volcan. Located in the middle of a plain, this place has a humid microclimate. The lake is surrounded by a humid forest at an altitude about 4950 feet, and daytime temperatures are in the 60s (°F). On clay banks we found many rhizomatous begonias, all with white flowers, but very few with seed pods ready to pick. When you see so many wild begonias together you get so enthusiastic that they all look the same to you and you don’t know where to stop your eyes. After seconds, you start seeing the differences, sometimes very small.

Hidden behind other plants I saw one rhizomatous begonia, to me the most beautiful in the area, with ovate, dark green leaves that have four large “drip points” around it, and white flowers. Since this was the only plant I found, the amount of seed collected was small. On another bank I discovered a rhizomatous with ovate, light green leaves, crenate margins, and white flowers.

After hours of walking around the *lagunas* searching for seed and admiring the beauty of the surroundings, but with the eyes open in order to avoid possible snakes (we were very lucky not to find one in any of our trips), we returned to the hotel to relax in the swimming pool area and later to walk around the spectacular hotel garden and trails.

**February 17:** Guessing what we were going to find, we started looking in the Volcan plain area at the foot of the Baru for rivers or creeks where begonias could grow. In the Delgado’s cattle farm we found a small creek shaded by trees. I knew we could find *Begonia* there so we walked down the slope. As soon as we stepped into the water Juan Carlos saw one. It was a shrublike begonia, two feet high, with elliptical, dark green leaves and white flowers, I think this is *Begonia seemaniana*. Along the creek we found more of this species.

As we walked, following the water course, in the “walls” of the creek we spotted other begonias. One was an interesting rhizomatous



*Juan Carlos Brin in front of the Hotel Bambito, and in the field with a machete, below. At the upper part of the photo is Begonia quaternata with tall sprays of white flowers. Photos for this article by R. Brin.*

begonia with white flowers and ovate, green leaves that had two drip points forming a “bay” between them. Another was rhizomatous with ovate, green leaves and white flowers. Finally I found one rhizomatous with beautiful ovate leaves, but since the seed pods were dry I don’t know the color of the flowers. There were more begonias but ones without flowers or in full bloom with no seed pods ready.



White-flowered rhizomatous begonia

**February 18:** We decided to explore the hotel vicinity and near it we discovered a trail parallel to a small river. We walked in and, to our surprise, found ourselves in the middle of a Disney-like scenery. The trail was carpeted with impatiens full of flowers of many colors, mixed with all types of ferns, and illuminated only by the filtered light coming through the tall trees. Behind the impatiens there were hundreds of *Begonia quaternata*, all in flower, a spectacle I never saw before. The place was humid, altitude around 5000 feet and temperatures in the 60s. *Begonia quaternata* is endemic. The rhizome is erect and densely rooting, the leaves are green with peduncles much exceeding the leaves, and the flowers are white. In this area we also found the same shrublike species we saw at the Delgados place and other small rhizomatous begonias without flowers.

**February 19:** Driving up and up, we arrived at Cerro Punta, an idyllic place where you can almost touch the clouds with your hands. The place is mostly cattle farms and potato plantations surrounded by mountains covered with rain forest. This is a place where you find beautiful flower gardens at every house. The altitude here is 6200 feet and temperatures are in the low 60s.

We took a trail and after a few miles I saw, at one side of the road, a cascade of white flowers. Immediately I told Juan Carlos to stop. It was a special view, a tree completely covered by a scendant *Begonia* full of flowers. Since it was behind a deep ditch of soft mud, Juan Carlos had to make a trunk bridge to collect the seed. The leaves were elliptical and dark green, I believe this was *Begonia convallariodora*.

Since we had an invitation for lunch we stopped the search to return to Bambito. We took a “free” afternoon to enjoy Bambito.

**February 20:** Rio Sereno is an area near the Costa Rican border. You can reach it from Bambito by a very good road. There are a lot of coffee plantations in the area and the views from the road are fantastic. We stopped several times to observe begonias, many in full bloom with no seed pods. In the area we collected seed from the following *Begonia*: a trailing-scandent species similar to the one we found in Cerro Punta; a rhizomatous with ovate, green leaves that have two drip points, and white flowers (to me this looks like it could be *B. stigmosa*); and from another rhizomatous with ovate, green leaves and three drip points, also with white flowers.

**February 21:** Well, everything comes to an end, so at 5:30 a.m. we returned to David to take the plane back to Panama City. I arrived home very satisfied with the trip because my son and I had a wonderful time collecting seed for the Seed Fund, resting, and enjoying each one of the places we visited.

I hope that through this short article I have given you an idea of the experiences I had in this trip to the highlands of Chiriqui, the sanctuary of the quetzal and many wild begonias. Hasta pronto !

## Clayton M. Kelly Seed Fund

Joan Campbell, director

- B. attenuata* M-J 1  
Brazilian species, rhizomatous, classified as Distinctive Foliage/Unusual Shape or Habit of Growth. Fragrant white blooms.
- B. bradei* M-J 2  
African species, shrublike, with hairy, narrow leaves, and white blossoms. Syn. *laeteviridis*
- B. scharffii* (?) M-J 3  
Brazilian species believed to be *B. scharffii*. It is shrublike with wide, hairy leaves and with pink hairy blossoms. No further information available.
- B. coccinea* M-J 4  
The true species. It is small, canelike, with succulent leaves and coral red blossoms. Native to Brazil.
- B. crassicaulis* M-J 5  
Guatemalan species pictured on the cover of the *Begonian* for Jan-Feb 1985. The upright rhizome drops its leaves as the inflorescences form, and there is an interesting glittery appearance to the floral parts. White blooms.
- B. involucreta* M-J 6  
Costa Rican species classified as Thick-Stemmed. The large leaves are minutely pubescent, and the white blooms are fragrant. Supply is limited.
- B. lindleyana* M-J 7  
Guatemalan species classified as Thick-Stemmed, has white blooms in spring and summer. This begonia has been confused with *B. barkeri* and *B. sparsipila* (see Feb. 1972 and Sept. 1980) and with *B. pilifera* (see M-J 13 below).
- B. malabarica* M-J 8  
Indian species classified as Thick-Stemmed.
- B. malabarica* M-J 9  
Indian species classified as Thick-Stemmed.
- B. malabarica* M-J 10  
Indian species classified as Thick-Stemmed.  
The seed offered above is each a different type from the others and from that offered in the September-October listing. If you'd like to study the matter, try M-J 11 too, which came from a different grower.
- B. dipetala* and/or *B. malabarica* M-J 11  
Indian species classified as Thick-Stemmed. Specify which you want to order.
- B. parilis* M-J 12  
Brazilian species classified as Thick-Stemmed, with white blooms. This plant has a broad leaf and should make a good basket plant.
- B. pilifera* M-J 13  
Collected by Scott Hoover in Colombia and believed to be a variety of *B. sericoneura* or of *B. lindleyana* by some experts. This is a very variable species, but it always has an upright stem to identify it. It was one of the stars at the Miami Convention. Blooms are white.
- B. incarnata* × *B. incisa* M-J 14  
A cross pollination. Supply is limited. 50¢ per packet.
- B. setosa* cross M-J 15  
Open pollinated and selfed. Supply is limited 50¢ per packet.
- B. ludwigii* × *B. pearcei* M-J 16  
This is a thick-stemmed type crossed with a tuberous species. Supply is limited. 50¢ per packet.

Thanks to the generosity of our friend, Roberto Brin, the Seed Fund has fresh seed of begonias collected at altitudes ranging from 2800' to 6000' in Panama. The mature plants are naturally energy efficient, and most should do well year round in a cool room in the home. These truly are shade lovers and should not require strong light as established plants. Please remember, unless your home is like a rain forest, these large-leaved plants are not likely to grow too large to enjoy.

*B. quaternata* M-J 17

Rhizomatous species first collected in 1908. Leaf is entire, about 6" long, and flowers are white. Collected near Baru Volcano in Panama, it is usually found at 5000' and higher altitudes. Syn. *B. vestita*.

*B. U193* M-J 18

Rhizomatous begonia with large leaves, many striking drip points, and white flowers. Collected from Volcan Lagoons area at 4900' where temperatures are in the 50s and 60s (°F).

*B. U194* M-J 19

Rhizomatous begonia with pointed, entire 7" leaves and white flowers. Collected from Volcan Lagoons area at 4900' where temperatures are in the 50s and 60s.

*B. U195* M-J 20

Rhizomatous begonia with drip points on round, 6" leaves and white flowers. Collected on the clay banks of a creek, overhung by trees, at 4900', temperatures in the 50s and 60s.

*B. U196* M-J 21

Rhizomatous begonia with very round leaves with a few drip points, and white flowers. The leaf is about 5" long. Collected from the clay banks of a tree-covered creek at 4900', temperatures in the 50s and 60s.

*B. U197* M-J 22

Trailing-scandant begonia with entire, tapering leaves about 5" x 2 1/4", and white flowers. Collected at 6200' near Cerro

Punta, temperatures in the 50s and 60s.

*B. U198* M-J 23

Rhizomatous begonia, entire leaves 3 1/2" x 6" with lovely, drip points and white flowers. Collected at ' from the clay banks of a tree-covered creek, temperatures as above.

*B. U199* M-J 24

Shrublike begonia with entire, slender leaves about 5 1/2" x 2 1/2" and white flowers. Collected at Bambito in the rain forest at 5250', temperatures as above.

*B. U200* M-J 25

Rhizomatous begonia with large, 8" entire leaves and white flowers. Collected on the road to Volcan at 3200', temperatures in the 50s and 60s.

*B. U201* M-J 26

Rhizomatous begonia with large drip points on 5" leaves and white flowers. Collected at Rio Sereno in the Baru Volcano area at 6000', temperatures as above.

*B. U202* M-J 27

Rhizomatous begonia with long shaggy drip points on 6" leaves and white flowers. Collected at Rio Sereno as above.

*B. U203* M-J 28

Rhizomatous begonia with attractive small, entire leaves, many drip points and white flowers. Collected near Cerro Azul (lake) area on a clay bank open to the sun at 2800', temperatures in the 50s and 60s.

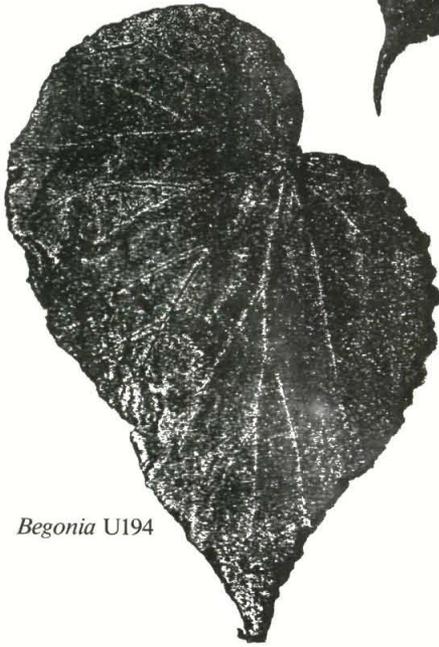
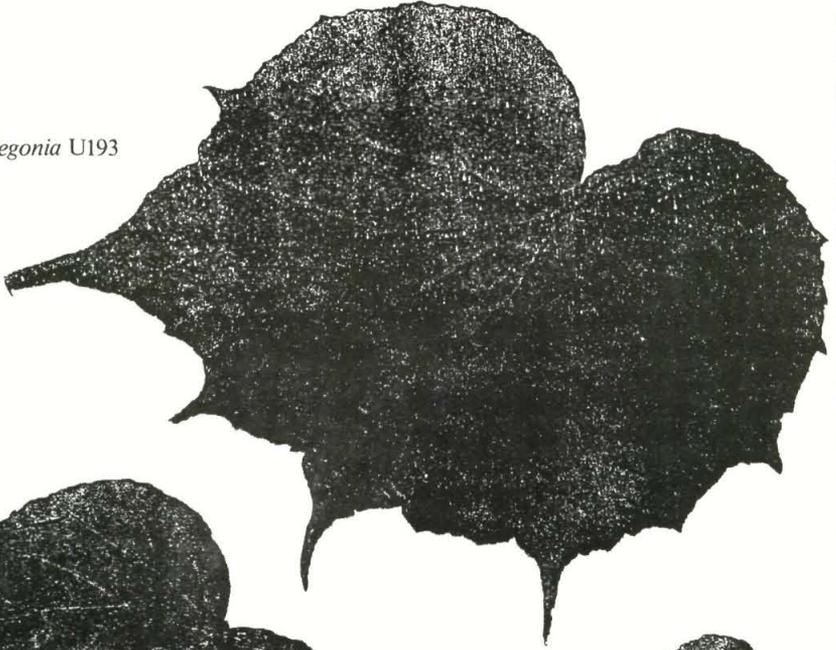
*B. U204* M-J 29

Trailing-scandant begonia with entire leaves about 1 1/2" x 3" and white flowers. Collected at La Mesa near El Valle in the rain forest at 3000' with temperatures ranging from the 60s to 80s. These seeds are short lived, so sowing should not be delayed.

*B. U205* M-J 30

Rhizomatous begonia with large, peltate, lobed leaves, dark green, with red on reverse. The pressed leaf resembles a pin-

*Begonia* U193



*Begonia* U194

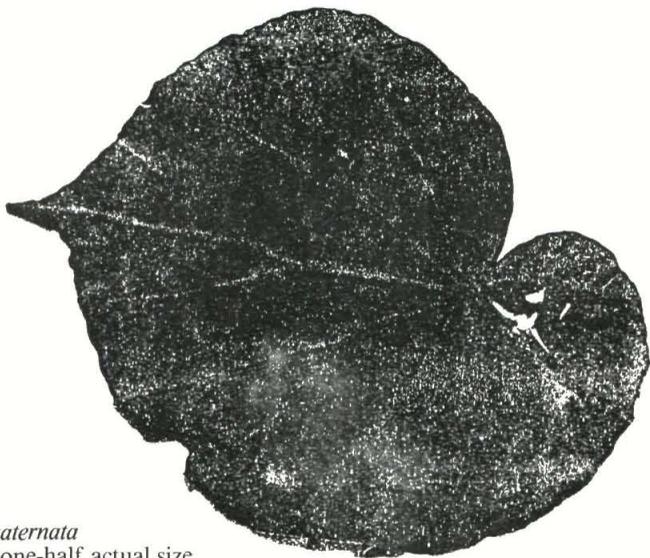
*Begonia* U199



*Begonia* U197  
*B. seemaniana* (?)

### LEAVES OF COLLECTED PLANTS

The pressed leaves from *Begonia* whose seeds were harvested were copied on a Xerox machine by Mr. Brin. In printing the *Begonian*, the size was reduced to one-half the original size.



*B. quaternata*  
Leaf one-half actual size

wheel in shape. The flowers are pink. The seed was collected at Linames Gardens in El Valle at 2800' with temperatures in the 50s and 60s.

Be sure to suggest a substitution if the listing is "supply limited." Just because something is listed does not mean it is not on hand. Write if there is something special you are seeking.

I have reports of variation in the *B. dichroa* seedlings. M-A 10 should read "U188." I'm sorry, these things happen.

Don't hesitate to inquire about your seed orders. In the U. S., you should have your order within thirty days of writing to me. Your check will not be cashed until your order is in the mail.

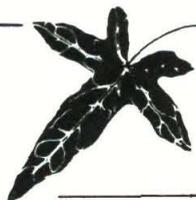
The plastic Uni-cassettes in which small quantities of seeds or bulbils are mailed are a gift to the Seed Fund from Kingsley Langenberg. I hope the members will save

them and return them to the Seed Fund for recycling.

Please let me have your comments on the U-numbered species begonias. If every branch would grow just one as a project, we soon would have these unknown species identified and cultural suggestions for future reference. If any branch is interested in such a project, the Seed Fund will gladly forward the seeds.

All packets of seed \$1.00 unless noted otherwise. "Growing From Seed" pamphlet is 25¢.

Orders from U. S., Mexico, and Canada need 45¢ over seed price for postage (60¢ if over 12 packets are ordered). Overseas orders require \$1.20 for postage. Send checks or money orders in U. S. funds made payable to Clayton M. Kelly Seed Fund. Mail to **Joan Campbell, 814 NE Honeyhouse, Corvallis, MT 59828.**



## THE AMERICAN IVY SOCIETY

is the International Registration Authority for *Hedera*; provides sources for new & unusual ivies; publishes *Ivy Journal* three times a year with reports on research, hardiness testing, life-sized photos of ivies. Memberships: General \$15; Institutional \$25; Commercial \$50. Information: The American Ivy Society, P.O. Box 520, West Carrollton, OH 45449-0520.

## BEGONIA U001 IS BEGONIA GRISEA

Rudolf Ziesenhenné

Alphonse De Candolle's 1859 description of a *Begonia* collected on a French botanical expedition from 1816 to 1821 to Brazil has aided in the identification of a so-called Species from Costa Rica which first came to the attention of the American Begonia Society identification personnel in 1969. This involved comparing growing plants from "Birdsey Collection II Costa Rica" and from a 1974 collection in Bahia, Brazil, with the 1859 description and photo of the herbarium specimen in the Paris Museum.

In May 1969 Mrs. Griscom Bettle, Jr., of Florida asked me to identify a *Begonia* which was in cultivation but was not identified satisfactorily. She had purchased the plant at Fantastic Gardens in Florida four or five years before with the label reading "Birdsey Collection II Costa Rica," had exhibited the plant at the 1969 Key West Flower Show and had distributed cuttings of the plant. In February 1971 I received a cutting of the plant which when grown had an overall grayish appearance, being covered with clear starlike hairs with the central stem red and the filaments radiating from the top colorless. The stems are tan colored below and pale currant red at the top. New stems arise directly from the soil, do not branch, and are self-supporting to three feet. The palmately nerved leaves have a roundish kidney shape. Long petioles extend outward from the stem and the leaf blade is held horizontally or tilted so one edge of the leaf faces the sky and the other edge faces the ground. The male flowers have two sepals and no petals, the filaments are one and a half times as long as the anthers, the anthers with connective extending beyond the pollen sacs. The female flowers have two sepals and three petals, three stigmas with arms having one and a half twists, stigma papillae entirely surrounding each arm, and three-celled seed pods

Rudolf Ziesenhenné grows, studies, and describes *Begonia* at his nursery at 1130 N. Milpas St., Santa Barbara, CA 93103.

with the placenta entire. I was pleased to find that the leaves of this *Begonia* are apheliotropic, i.e., they turn away from the hot, direct sun. When grown under almost clear glass, the leaves turn their edges toward the sun and resume their normal horizontal position when the sun passes off of them.

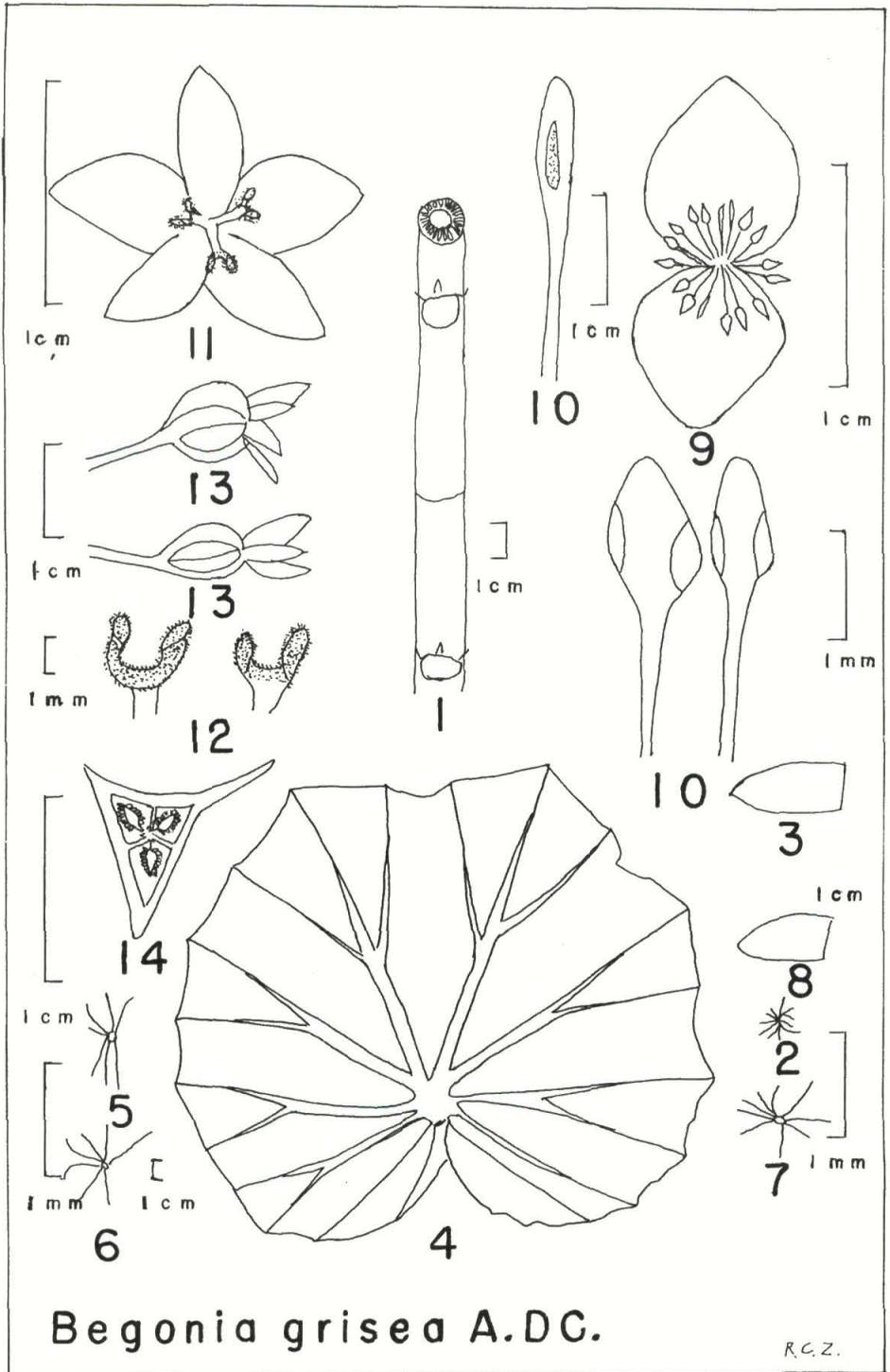
Other plants with grayish leaves which have been studied are *Begonia incana* L. & O., *B. kellermanii* C. DC., and *B. machrisiana* Smith & Schubert, but all have peltate leaves unlike the plant in question.

In an attempt to identify the plant I checked the Sections (sub genera) of *Begonia* that had stigmas entirely covered with papillae, only 2 sepals and no petals in the male flower, filaments 1 1/2 times longer than the anthers, the connective extending beyond the pollen sacs, and having palmately nerved leaves.

An early study of the plant showed that the anthers and their arrangement were quite variable, and there was a question as to whether the plant was a species or a hybrid. Scientific work was put in abeyance on the plant until the late Ralph Spencer brought me a plant on October 17, 1974, which appeared to be the same as the "Birdsey Collection II Costa Rica." Spencer said he collected the plant 15 km past Anderae, at 2100 feet, Bahia, Brazil. His collection number is B128 and the American Begonia Society identification number is U001. Spencer reported that the plant had flower stems three feet tall in the wilds.

In the spring of 1975 Joy Logee Martin sent me a plant obtained in Costa Rica, with leaves almost identical to Spencer B128. As it developed in growth I found it was a Brazilian native named *Begonia petasitifolia* Brade which had starlike hairs, but the plant had a heavy stem with erect tip with the stem lying on the ground. The leaves are similar to the Spencer plant, roundish kidney shaped; the stipules are triangular similar to those of a rhizomatous begonia. The male flowers have four tepals and the female flowers have five tepals. The plant, *B. petasitifolia* Brade, was collected in 1957 at Morro de Chiapeu, Brazil, a location

Continued on page 76.

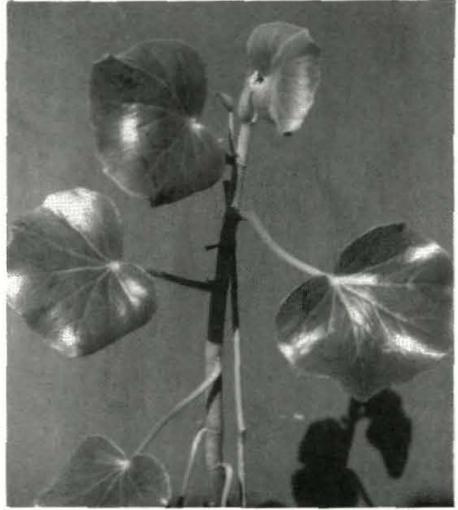


**Begonia grisea A.D.C.**

R.C.Z.

The following is a complete description of *Begonia grisea* based on living material.

*Begonia grisea* A. DC. amended, plant covered with starlike hairs which give it a grayish look; *stem* (figure 1) perennial not branching, arising singly from the soil, erect, self-supporting to 3' tall, 3/4'' in diameter, center of the uniformly cylindrical stem reddish, fleshy, surrounded by a wall of woody fibers 1/8'' thick, stem very rigid, surface smooth, lettuce green (Royal Horticultural Color Chart) 861/2, lower part buff with age, covered with colorless starlike hairs (figure 2) producing a grayish appearance, leaves inserted alternately at the nodes on opposite sides, confined to the upper half of plant, internodes length average 2'' (shortest 1/4'', longest 3''), nodes slightly swollen at the stipule point of attachment, leaf scar pronounced, flat on top; *stipules* (figure 3) falling very quickly, lettuce green 861/2, oblong with a blunt tip folded together, not keeled, margins even, 1 1/4'' long, 5/8'' wide, brown and papery when dry; *petioles* cylindrical, 1/8'' in diameter, 5-7'' long, currant red 821, smooth, shiny, covered with starlike hairs (figure 5) producing a gray appearance, below spinach green 0960/2, nerves protruding, immature leaves kidney-round heart-shaped, mature leaves very symmetrical, transversely broadly elliptical, angular, prominent rounded basal lobes, 8-10 nerves protruding on the underside of the leaf, margin toothed, larger blunt tooth at the ending of each nerve, undulate, about 5'' long, 6'' wide, deep open sinus at the point of attachment with the petiole, clear starlike hairs cover top (figure 6) and bottom (figure 7), nerves radiate symmetrically from the base, two lengthwise ones, one on each side of the leaf center arise from a single short undivided base from which a lateral nerve develops, 2 lateral nerves on each half, one basal nerve on each half; *inflorescence* an axillary divided cyme, many flowered; *flower stem* to 3' long, erect, green and currant red 821, smooth, covered with starlike hairs, pedicels 3/8'' long, covered with starlike hairs; *bracts* (figure 8) quickly falling, egg shaped, thin, cupped, folded near the tip, lettuce green



*Begonia grisea*, grown and photographed by R. Ziesenhenné.

861/2 then brown and papery, dull, parallel nerved, starlike hairs on the outside, tip acute 1'' long and 3/8'' wide; *male flowers* (figure 9) 2 sepals, no petals, white, widely egg-shaped, sharp pointed, base rounded, margin even, shiny, white starlike hairs on back, 5/16'' long, 1/4'' wide; *stamens* (figure 10), 18-19, free, arranged loosely, filaments 1 1/2 times as long as anthers, anthers narrow to wide egg-shaped, tip rounded, 1/16'' long, 1/32'' wide, connective extends 0.2 mm beyond pollen sacs, dehiscing laterally; *female flower* (figure 11) without bracts, pedicels 3/8'' long, bare, 5 tepals, white, 2 exterior ones thin, egg-shaped oblong, tip acute, base rounded, bare, smooth, 7/8'' long, 9/16'' wide, 3 interior ones white, thin egg-shaped oblong, margin even, smooth, 11/16'' long, 9/32'' wide, veining not apparent; *styles* (figure 12) 3, 2-divided, arms linear oblong, 1 1/2 twists, stigma papillae cover all surfaces, 0.5 mm united, 0.5 mm free, arms 1.4 mm long; *capsule* (figure 13) 3/8'' long, elliptical, ends blunt, white, 3 wings lateral, rounded, one longer 5 mm long, 8 mm wide; *ovary* (figure 14) 3-celled, placenta not divided, seed borne on all surfaces.

200 surface miles or 80 miles almost due north of the place Spencer collected B128.

Botanically it is necessary, as an aid in identification, to tell how a new plant differs from a similar named plant; Brade did not do this. *Begonia petasitifolia* Brade is remarkable for its long flower stem. My staked plant of *Begonia petasitifolia*, one foot tall, has in November, a flower stem over three feet tall.

I made a systematic study of *Begonia* of Brazil to determine if B128 had already been collected and named. I cataloged the *Begonia* by the Brazilian state in which they had been discovered. There was no similar plant to B128 in the state of Bahia; however in the adjoining state of Minas Geraes the *Begonia grisea* had been named by Alphonse De Candolle in 1859. My index showed that this plant was first published by De Candolle on page 138 of *Annales des Sciences Naturelles Botanique*, 4th series, Volume XI, 1859. I also found a more complete description in *Prodromus Systematis Naturalis Regni Vegetabilis* by Alphonse De Candolle, part 15, 1864, page 367, plant number 254. In the margin of this book I had a note saying I had the photo of this plant in my files. I located the photo of this type specimen which had been obtained from the Field Museum of Natural History in Chicago. With the aid of the Rockefeller Foundation Fund for Photographing Type Specimens, their staff had taken the photos and numbered this photo 38523.

On the herbarium specimen are the following notations: "C. Candonger, pierre #444. Herb. Mus. Paris. *Begonia grisea* A. DC. Signed (Alph. DC. 1859). Brasil-Province de Minas Geraes. Voyage d'Auguste de Saint-Hilaire, de 1816 a' 1821 Catl. B' No. 2027." Auguste de Sainte-Hilaire (1779-1853) was a French botanist, entomologist, and explorer of independent means. Other begonias he collected at this same time are *B. fruticosa* A. DC., *B. hilariana* A. DC., *B. paulensis* A. DC. and *B. rubropilosa* A. DC.

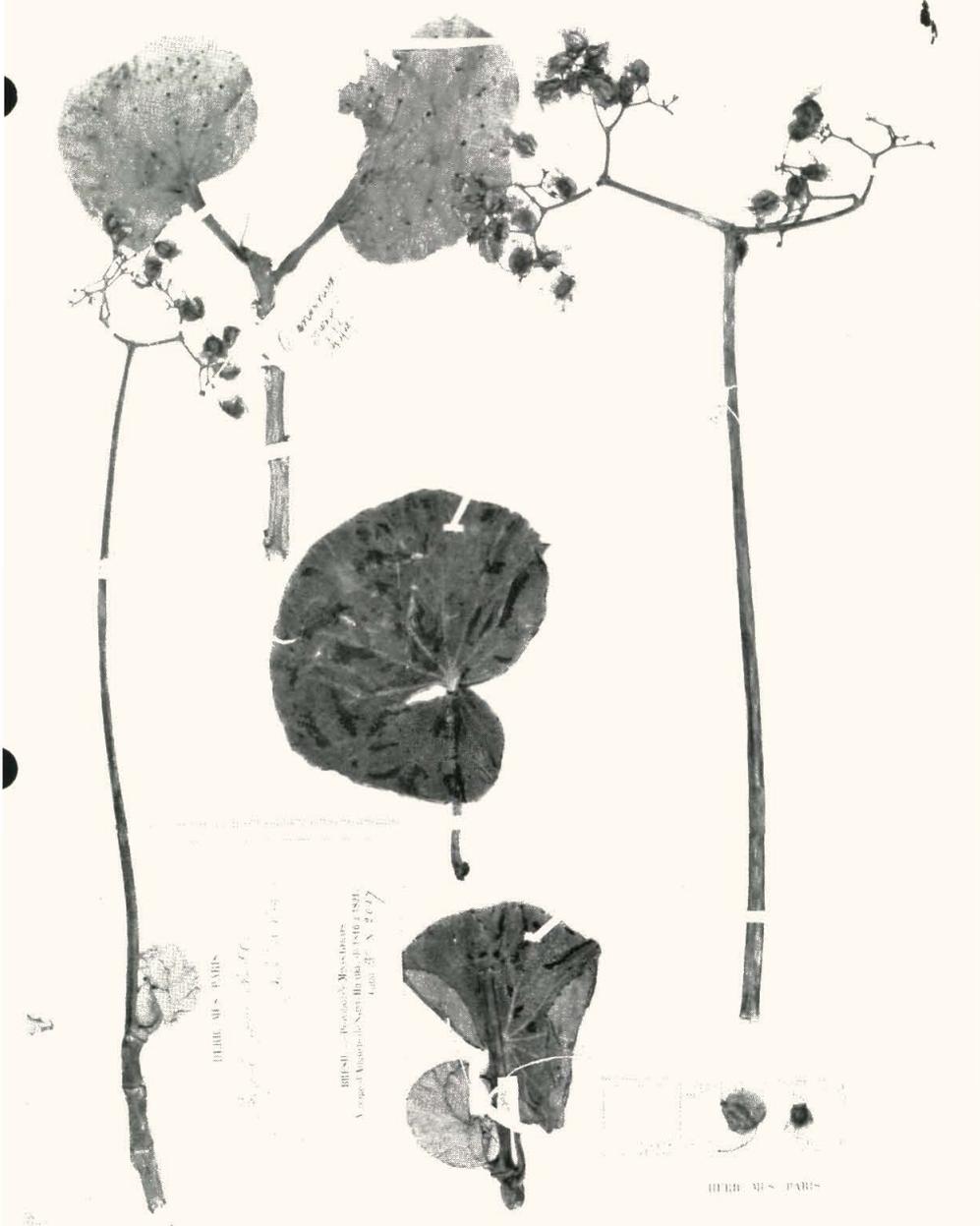
The herbarium specimen contains three very short stem tips, one with a small distorted developing leaf with a flower stem about 10'' long with female flowers, one with two distorted immature leaves, and one with two im-

mature leaves. There is one inflorescence with female flowers. One mature leaf is presented but the lower edge is missing. The first thing I noticed is the removal of the starlike hairs due to handling. After studying the photo of the herbarium specimen and reading the original description, I must conclude that *B. grisea* A. DC. and "Birdsey Collection II Costa Rica" and ABS *B.* U001 (Spencer B128) are the same plant.

It is odd that two *Begonia* of Brazil should have been reported as collected in Costa Rica, but there is an interesting botanical garden in Costa Rica which apparently has close ties with collectors in Brazil and shares cuttings with interested persons.

I reported my findings to Carrie Karegeannes who then sent me a photocopy of the article "Plantas Novas Mineiras" by W. Schwacke published in 1898 in Fasciculo I of *Estado De Minas Geraes*, which on page 4 contains a description of *Begonia ragozini* Schwacke and is accompanied by a drawing on Table III. This plant is entirely new to me and is not listed in any of my *Begonia* indexes. The leaves of this plant are similar in shape to the begonia discussed above, the description stating that the stem is two meters long which suggests that, like *B. petasitifolia* Brade, it is not able to support itself. The outstanding difference is that the placenta is two-divided while *B. grisea* has an undivided placenta. It also differs in having very thick stems with short internodes; grooved petioles; very persistent, large, egg-shaped, sharp-pointed stipules; and the anthers linear.

Alphonse De Candolle said he did not see any male flowers of *Begonia grisea* but assumed they had two sepals and two petals; however, the male flowers of *B. grisea* have two sepals and no petals so the plant was incorrectly placed in section *Wagneria* Alph. DC.; he also questions whether it should belong in section *Ewaldia* Alph. DC. The key characteristics of *B. grisea* are two sepals and no petals in the male flower, stigma papillae entirely covering the style branches, one and one-half twists to the stigma arm, filaments free and much longer than the anthers, the connective extending beyond the pollen sacs,



angular, palmately nerved leaves.  
*Begonia grisea* does not fit entirely into any existing section. It comes closest to section *Meionanthera* A. DC. but this section does not have extended connective tissue in the anthers and the plants all have pinnately nerved leaves.

This photograph of the herbarium type specimen was used through the courtesy of the Field Museum of Natural History, Chicago, and the Herbarium of the Museum of Paris to which we are indebted.

# BEGONIAS NEED SPECIAL CARE IN HOT CLIMATES

*Robert B. Hamm*

After 11 years of having to deal with climatic conditions that are, to say the least, difficult for both begonias and their growers, I left northern Texas. I wanted to share those lessons that I learned from other growers as well as from trial and error that cost me several thousand plants over the time I lived there.

On a *mild* Wichita Falls summer day, high temperatures hover in the upper 90s and drop to 80 as the low. These are accompanied by humidity readings of 4% to 5% and wind that never stops blowing. As a result plants dry out extremely rapidly, foliage becomes scorched, and plants suffer what can only be described as heat stroke. To get begonias through this takes special care and—when there is a *hot summer of 90 days with highs of 102° to 110° and a low of 90°*—unwavering devotion.

The first problem in these conditions is actually one of light. The lighting that the plants want and require during cooler weather to grow and bloom well will prove fatal in such hot conditions. The plants simply can not cool the leaves sufficiently in such heat. The sunlight which prompted growth a month before will roast the foliage into pale pulp in an amazingly short time, so a fine sense of balance must be reached: shading enough to let the plants survive, but not so heavy to cause weak growth. Remember, the higher the temperature, the lower the plants' tolerance for sun.

Secondly comes the problem of watering, with the interrelated factors of frequency and soil drainage. In hot weather we increase the watering, and often the soil mix that is perfect in cool weather is too heavy for frequent

*Bob Hamm abandoned the hot climate of Wichita Falls, Texas, for the almost as hot climate of the Sacramento, Calif., area. His new address is 7711 Greenback Lane, #133, Citrus Heights, CA 95610.*

waterings. I recommend a light, very well drained soil that has a good organic content for moisture retention, yet holds a good amount of air. This means more frequent watering, but will help prevent rot.

As for how much water and when—let the soil dry somewhat between waterings. Extreme heat will cause foliage to pale, and this is often taken as a sign of need for water. While it is caused by water loss in the plant, it is due to the plant losing water faster by evaporation through the leaves than it is physically able to absorb through the roots. It is not due to the soil actually being dry. Watering at this time will generally lead to stress and rot. It is best to increase shading to lower the evaporation from the leaf. Misting can also help.

*Under conditions of heat stress with overabundant water supply, begonias will develop bacterial or fungal root rot. These can be decreased by use of such chemicals as Ban Rot, Truban, Terrachlor, etc., but letting the plants run dry is one of the best preventatives.*

Feeding under heat stress should be done carefully to avoid salt buildup and damage. Frequent weak feedings are better than strong, but less frequent ones. Remember, you are balancing the slower growth of a plant under stress with the fact that frequent watering leaches nutrients. If the plant is not receiving nutrients, starvation will only add to the stressed condition.

*A very important warning—do not let your care for your plants become so habitual or scheduled that you ignore the daily weather! An unexpected wet, cloudy spell, or the first fall cool front will spell disaster if you fail to adjust. Often I have seen people support their entire collection through a hot summer only to lose large portions of it when the weather cools in the fall and they forget to change their watering patterns.*

Those who live in hot climates should note that many varieties that are offered for sale

## REFERENCES ABOUT *BEGONIA* PUBLISHED IN *PHYTOLOGIA*

Compiled by Carrie Karegeannes,

This is a listing of the articles about *Begonia* that have appeared in *Phytologia* since 1985. All articles are reports and/or discussions of botanical research.

Copies of *Phytologia* may be ordered from Publisher and Coeditor Harold N. Moldenke, 590 Hemlock Avenue, N. W., Corvallis Oregon 97330. The cited prices include postage, except for the *Phytologia Memoir*, part of a series separate from the journal itself. Early issues may no longer be available.

Baranov, Andrey I. 1981. "Studies in the Begoniaceae," *Phytologia Memoirs* IV, vi + 88 pages, paper cover; \$9.95 + \$1.50 shipping, from the author. (taxonomic descriptions, drawings. See *Begonian* 48:19, Jan-Feb 1982.)

Baranov, A. I., and Barkley, F. A. 1972. "Some nomenclatural changes in the section of *Begonia* L." *Phytologia* 24(2):155-57.

\_\_\_\_\_. 1973. "The combination of *Begonia fuchsiaeifolia* (A.DC.) Warburg." *Phytologia* 26(4):217-20.

Barkley, F. A., and Boghdan, K. S. 1972. "An Unusual *Begonia* inflorescence" *Phytologia* 23(4):323-26.

Boghdan, K. S., and Barkley, F. A. 1972. "Stomatal patterns in the genus *Begonia*," *Phytologia* 23(4):327-33.

Burt-Utley, K. 1984. "Notes on some Mesoamerican *Begonia*," *Phytologia* 54(7):486-89. \$3.00 incl. postage. (This issue also has an article by Golding & Karegeannes and another by Smith & Wasshausen, listed under those authors' names.)

Golding, J. 1977. "The nomenclature of the genus *Begonia*," *Phytologia* 37(5):425-40. \$2.00.

\_\_\_\_\_. 1978. "Corrections to 'nomenclature of *Begonia*,' " *Phytologia* 38(3):216.

\_\_\_\_\_. 1978. "*Begonia* nomenclature notes, 1: *Begonia repens* Lamarck," *Phytologia* 39(2):112-26. \$2.00. (4 photos.)

\_\_\_\_\_. 1978. "*Begonia* nomenclature notes, 2: the *Begonia* in Wallich's Numerical List," *Phytologia* 40(1):7-20. \$2.00. (Present status of Wallich's nomene nude for *Begonia*.)

\_\_\_\_\_. 1978. "*Begonia* nomenclature notes, 3: *Begonia lobata* Schott and *Begonia glandulosa* nomen confusum," *Phytologia* 40(6):457-66. \$2.00. (Photos of specimens of *B. lobata*, *B. multinervia*, *B. glandulosa*, *B. pinetorum*.)

\_\_\_\_\_. 1980. "*Begonia* nomenclature notes, 4: The lectotypification of *Begonia obliqua* L.," *Phytologia* 45(3):221-54. \$3.00

\_\_\_\_\_. 1981. "*Begonia* nomenclature notes, 5: *Begonia peltata* Otto & Dietrich and related species," *Phytologia* 47(4): 291-300. \$3.00.

\_\_\_\_\_. 1982. "*Begonia* nomenclature notes, 6: *Begonia cucullata* Willdenow and included species," *Phytologia* 50(5):330-56. \$3.00.

Golding, J. and Karegeannes, C. 1984. "*Begonia* nomenclature notes, 7," *Phytologia* 54(7):486-89. \$3.00. (Nomenclatural changes in preparation of species list. Same issue as above Burt-Utley article.)

- Hoover, W. S. 1976. "An altitudinal survey of species of *Begonia* having a horned fruit," *Phytologia* 35(2):65-78, tables. (Colombian trip.)
- \_\_\_\_\_. 1979. "Notes on spatial distribution patterns for three Mexican species of *Begonia*," *Phytologia* 43(1):107-32. (*B. heracleifolia*, *B. nelumbiifolia*, *B. californica*.)
- Smith, L. B. 1965. "Herbarium notes, II: Begoniaceae," *Phytologia* 12(5):250. (Very brief note renaming *B. vellozoana* as *B. olsoniae* S. & S. because of *B. velloziana* Walp.)
- \_\_\_\_\_. 1973. "Herbarium notes, IV," *Phytologia* 25(6):418-19. (Renaming 2 Brazil species from "Begoniaceae of Santa Catarina (Brazil) and describing *B. trujillensis*.)
- \_\_\_\_\_. 1973. "*Begonia* of Venezuela," *Phytologia* 27(4):209-27. \$2.00. (Includes drawings of species.)
- \_\_\_\_\_. 1976. "Herbarium notes, V," *Phytologia* 33(7):441. (*B. microphylla* A. DC. var. *major* LBS, var. nov.)
- Smith, L. B. and Wasshausen, D. C. 1979. "*Begonia* of Ecuador," *Phytologia* 44(4):233-56. \$3.50. (9 plates).
- \_\_\_\_\_. 1983. "Notes on Begoniaceae—I," *Phytologia* 52(7):441-51. \$3.00. (Changes in nomenclature of a number of species, validating some nomenclature cases, etc.)
- \_\_\_\_\_. 1983. "Notes on Begoniaceae—II," *Phytologia* 53(4):297-301. \$3.00. (Venezuela. *B. humillima* S. & W., *B. confinis* S. & W., *B. piurensis* S. & S., emend S. & W.)
- \_\_\_\_\_. 1984. "Notes on Begoniaceae—III," *Phytologia* 54(7): 465-73. \$3.00. (Revision of status of some species incl. *B. albomaculata*. Same volume also has Golding & Karegeannes and Burt-Utley, listed above.)
- \_\_\_\_\_. 1984. "Notes on Begoniaceae—IV," *Phytologia* 55(2):112. \$3.00. (Corrections for "Notes...—III")
- \_\_\_\_\_. 1984. "Notes on Begoniaceae—V," *Phytologia* 56(1):16. (Three determinations and a new variety.)

## Hot Weather Care

Continued from page 78

were not developed for such conditions. A plant may be gorgeous and grow well for people in many other areas but yet not be good in your climate. I urge you to get in touch with someone in a similar climatic situation to find out what varieties do well for them and what precautions they take. If you don't know any growers in similar climates, contact either the nearest ABS branch or the members-at-large chairman for names of possible advisors. Also the round robin director might suggest an appropriate robin or give you the name

of someone in your area who would be glad to exchange information. Last, but not least, I suggest you contact the Southwest Region of ABS, since many members of that group live under such conditions.

If you are dead set on a particular plant, however, don't give up. Even varieties that many consider impossible for your conditions can be grown with will and effort. Several people in Oklahoma and North Texas grow beautiful rex begonias, even though the climate is as hostile to them as you can get. To do the impossible just takes a lot of dedication.

## BEGONIA QUESTION BOX

Mabel Corwin

**QUESTION:** I am moving in a month and a half from New York to Detroit and am faced with the prospect of moving a fair number of begonias. Most are rex cultivars, but there are a few rhizomatous and fibrous varieties as well. I have several questions. First, I have started several new plants which are up to three or four leaves. Am I correct in assuming that these younger, smaller plants will survive the trip better than my larger specimen plants? Should I simply pass these larger plants on to friends and carry cuttings? Secondly, can you offer any suggestions to keep as many as possible from perishing during the two-and-a-half-day trip? I plan to wrap the pots in sphagnum moss and surround that with plastic wrap, imitating the way my plants have arrived from Logee's and other mail order companies.

Finally, I have harvested some seeds from one of my plants and wonder if the seed will remain viable until we get to Detroit. How long does rex begonia seed last? Thank you for your help. Having spent so much time growing these plants, I am loathe to transport them if it will kill them and appreciate any hints you can offer. NEW YORK

**ANSWER:** You probably will do better transporting small plants and cuttings. They certainly will be easier to move. Put sphagnum moss on the mix in the pot and wrap the pot securely with plastic wrap. It can be held together with rubber bands or tape. I like to roll folded newspaper around the plant with the top folded over. The plants can then be laid down in the box and stacked without damaging the foliage. The plants should be damp, but not wet. The contents should fit snugly into the package, using newspaper or plastic chips if necessary. If well packed, I think they should survive the trip in good

*Send questions about begonia growing to Mabel Corwin, 1119 Loma Vista Way, Vista, CA 92084, Include a stamped, self-addressed envelope; you'll get a prompt reply.*

shape. Be sure they are not placed in a car where the sun will shine on them for any length of time.

Some varieties of begonia seed have a very short life. Others will remain viable for several years. It helps to keep the seed in the refrigerator. I have planted rex seed that was over a year old and had good germination. It usually takes a little longer to germinate. By all means, take the seed and plant it after you move.

**QUESTION:** I have a greenhouse full of begonias. Most are canes and many are in bloom. They have a bad case of mildew. Most plants are infected. Please help. TEXAS

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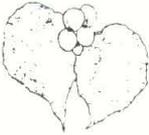
For info. call: Friends' Office (415) 558-3857

**ANSWER:** I think you should cut your plants back, rather drastically. I know this is going to hurt, but you need to get rid of as much of the infected plant as possible. This will open up the area and give better air circulation. I would start a regular spraying program with Ortho's Funginex. This should take care of your problem. Good air circulation is a must to prevent mildew. Space the plants so they are not touching. Some varieties are very susceptible to mildew and it is very difficult to eliminate it. If you are faithful with the spraying, I think it will solve your problem.

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## PLA NANI BEGONIAS

### The Seminar Programs

*Friday, September 5:*

The charming Evelyn Weidner of San Diego's famous Begonia Gardens, discusses "Big Beauties and their Kissin' Cousins;" Phyllis Bates, editor of the *Begonian* presents the thought-provoking subject "The Vanishing Species;" and Tracy McLellan, a newcomer on the begonia scene, shares the results of her "Oxford Sabbatical."

*Saturday, September 6:*

Rudy Zieshenne, Mr. Begonia himself, explains why "Quality Begonias are Everlasting;" Jack Golding, widely acclaimed Begonia researcher, shares "Adventures in Begonia Research" and Joan Coulat, superb begonia grower from northern California, reveals her prize-winning techniques with "V.I.B. Expertise."

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# ASSOCIATED GROUPS

Visitors always welcome.

The ABS Secretary maintains this list. Send in lists of new officers following elections or other changes as needed.

## REGIONAL GROUPS

### Eastern Region

Howard Berg, Pres. Pro-Tem  
16 Highview Terrace  
New Canaan, CT 06840

### Southwest Region

Merril Calvert, Pres.  
11201 Draper  
Choctaw, OK 73020

## ARIZONA

### Desert Begonia Branch

Barbara Rogers Moody, Pres.  
1200 Christmas Tree Ln.  
Pearce, AZ 85625

## CALIFORNIA

### Alfred D. Robinson Branch

2nd Tuesday, 10:30 a.m.  
Homes of members  
Juana Curtis, Pres.  
4107 Taos Drive.  
San Diego, CA 92117

### Central San Joaquin Branch

Ethyl Thompson, Pres.  
P. O. Box 11  
Strathmore, CA 93267

### East Bay Branch

3rd Thursday, 7:45 p.m.  
Northbrae Comm. Church,  
Berkeley  
Julia Huwe, Pres.  
743 Albemarle St.  
El Cerrito, CA 94530

### Garden Grove Branch

1st Wednesday, 7:30 p.m.  
12860 Euclid St.  
Garden Grove, Calif.  
Joy Blair, Pres.  
10006 Pomeroy Rd,  
Downey, CA 90240

### Long Beach Parent Chapter

3rd Saturday, 7:00 p.m.  
Mercury S & L  
4140 Long Beach Bl, L. B.  
Gilbert Estrada, Pres.  
7914 Springer Street  
Downey, CA 90242

### Monterey Bay Area Branch

4th Wednesday, 8:00 p.m.  
New Monterey Neighborhood  
Center  
Lighthouse & Dickman Sts  
New Monterey

Raymond Peterson, Pres.  
192 Walker Valley Rd.  
Castroville, CA 95012

### Orange County Branch

2nd Thursday, 7:30 p.m.  
Fullerton S & L  
2310 E. Lincoln Ave.  
Anaheim, Calif.  
Lorra Almstedt, Pres.  
1965 Celeste Lane  
Fullerton, CA 92633

### Palomar Branch

2nd Thursday, 7:30 p.m.  
Far West S & L  
1360 E. Mission Rd,  
San Marcos  
Eleanor Calkins, Pres.  
910 Fern Street  
Escondido, CA 92027

### Rubidoux Branch

4th Thursday, 7:30 p.m.  
West Riverside Auditorium  
4393 Riverview Dr, Rubidoux  
Norma Pfrunder, Pres.  
3484 Jefferson Street  
Riverside, CA 92504

### Sacramento Branch

3rd Tuesday, 7:45 p.m.  
Garden Center  
3330 McKinley Blvd.  
Sacramento, Calif.  
Mary Vipond, Pres.  
1719 Markham Way  
Sacramento, CA 95818

### San Francisco Branch

1st Wednesday, 8:00 p.m.  
Garden Center  
Golden Gate Park  
9th Ave. and Lincoln Way  
Dr. Harvey B. Kalin, Pres.  
2701 Jackson St.  
San Francisco, CA 94550

### San Gabriel Valley Branch

2nd Tuesday, 7:45 p.m.  
Los Angeles Arboretum  
301 N. Baldwin Ave.  
Arcadia, Calif.  
Marie McCooey, Pres.  
3043 Center St.  
Arcadia, CA 91006

### San Miguel Branch

1st Wednesday, 7:30 p.m.  
Casa del Prado, Rm. 104  
Balboa Park, San Diego  
Michael Ludwig, Pres.  
642 Torrance St.  
San Diego, CA 92103

### Santa Barbara Branch

4th Sunday, 2:30 p.m.  
The Cottage, 1130 N. Milpas St.  
Santa Barbara, CA 93103  
Rudolf Ziesenhenne, Pres.  
(same as above)

### Santa Clara Valley Branch

3rd Thursday, 7:45 p.m.  
Saratoga Library  
13650 Saratoga Ave.  
Saratoga, Calif.  
Titia Alaimo, Pres.  
4576 Kirk Road  
San Jose, CA 95124

### Theodosia Burr Shepherd Branch

1st Tuesday, 7:30 p.m.  
Senior Citizens Bldg  
420 Santa Clara St.  
Ventura, Calif.  
Barbara Schneider, Pres.  
3774 Vineyard Ave  
Oxnard, CA 93030

### Westchester Branch

1st Thursday, 6:30 p.m.  
University Christian Church  
5831 Centinella Ave  
Los Angeles, Calif.  
Robert Lindgren, Pres.  
4819 W. 121st Street  
Hawthorne, CA 90250

### Whittier Branch

1st Thursday, 7:30 p.m.  
Palm Park Community Center  
5703 South Palm Avenue,  
Whittier, Calif.  
Bea Sutton, Pres.

## CONNECTICUT

### Connecticut Branch

4th Monday, Homes of  
members, Arline Peck,  
Pres., Eagle Peak Road  
Pascoag, RI 02859

## DISTRICT OF COLUMBIA AREA

### Potomac Branch

4th Sunday, 2:00 p.m.  
Sherwood Hall Library  
1205 Sherwood Hall Lane  
Alexandria, VA  
Maxine Zinman, N. Dir.  
Rt. 1, Box 73  
Boyce, VA 22620

## FLORIDA

### Ft. Lauderdale Area Br.

Eleanor Fischer-Bender, Pres.  
4210 SW 6th St.  
Plantation, FL 33317

**Jacksonville Branch**

3rd Monday, 7:30 p.m.  
Garden Club/Jacksonville  
1005 Riverside Ave.  
Mary Bucholtz, Pres.  
2411 Hendricks Ave  
Jacksonville, FL 32207

**Miami Branch**

4th Tuesday, 8:00 p.m.  
Simpson Memorial Garden  
Center, 55 South West  
17th Road, Miami  
Ann W. Fergis, Pres.  
10220 SW 133rd Street  
Miami, FL 33176

**Palm Beaches Branch**

2nd Monday,  
Horticultural Center  
531 N. Military Trail  
West Palm Beach  
Frankleen Pinder, Pres.  
1101 Bimini Lane  
Riviera Beach, FL 33401

**Tampa Bay Area Branch**

3rd Thursday, 7:00 p.m.  
North Tampa Comm. Center  
N. 11th St. & E. Seward  
Tampa, Florida  
Robert L. Moore, Pres.  
7660 57th St. N.  
Pinellas Park, FL 33565

**ILLINOIS****Greater Chicago Area Br.**

4th Sunday (x Dec), 2 p.m.  
Oak Park Conservatory  
561 Garfield, Oak Park  
Dan Paulson, Pres.  
6339 S. Kenneth Ave  
Chicago, IL 60629

**MASSACHUSETTS****Buxton Branch**

Call for meeting info.  
Wanda MacNair, Pres.  
177 Hancock St  
Cambridge, MA 02139

**MINNESOTA****Minnesota Branch**

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

Thelma Adair, N. Dir.  
650 Tonkawa Rd  
Long Lake MN 55356

**NEW JERSEY****Elsa Fort Branch**

Helen Green, Pres.  
2100 Hunter St.  
Cinnaminson, NJ 08077

**NEW YORK****Hampton Branch**

2nd Monday, 7:45 p.m.  
Parrish Memorial Hall  
Southampton, NY  
Edward J. Thompson, Pres.  
310-A Hill Street  
Southampton, NY 11968

**Knickerbocker Branch**

2nd Tuesday, 7:30 p.m.  
Hort. Society of NY  
128 West 58th St  
New York, NY  
Viginia M. King, Pres.  
444 W. 48th Street  
New York, NY 10036

**OHIO****Greater Cincinnati Branch**

Erich Steininger, N. Dir.  
208 Beechpoint Dr.  
Oxford, OH 45056

**OKLAHOMA****Fred A. Barkley Branch**

3rd Sunday, 2:30 p.m.  
Will Rogers Garden Ctr  
3400 N. W. 36th  
Oklahoma City, OK  
Rosemary Cronk, Pres.  
P.O. Box 651  
Edmond, OK 73003

**PENNSYLVANIA****Edna Stewart Pittsburgh Br.**

3rd Wednesday, 7:30 p.m.  
Pittsburgh Garden Center  
Ellen C. Hamill, Pres.  
271 Parker Drive  
Pittsburgh, PA 15216

**William Penn Branch**

4th Tuesday, noon  
Homes of members  
Mrs. Jacques Le Roux, Pres.  
Dove Lake House  
Gladwyne, PA 19035

**RHODE ISLAND****Roger Williams Branch**

3rd Monday night  
Homes of members  
Arline Peck, Pres.  
Eagle Peak Road  
RFD #1, Box 478  
Pascoag, RI 02859

**TEXAS****Alamo Branch**

John L. Howell, Pres.  
123 Trillium  
San Antonio, TX 78213

**Astro Branch**

Gloria Quinn, Pres.  
234 Tallant Drive  
Houston, TX 77076

**Coastal Bend Begonia Soc.**

Rosa S. Meilleur  
4626 Lamont  
Corpus Christi, TX 78411

**Dallas Area Branch**

3rd Thursday, 7:30 p.m.  
Dealy Rec. Center  
6501 Royal Lane, Dallas  
Merle Gotcher, Pres.  
4453 Dee Lane  
Fort Worth, TX 76117

**Houston Texas Branch**

4th Monday, 10:30 a.m.  
Garden Center  
1500 Herman Drive  
Houston, Texas  
Mrs. Grant Herzog, N. Dir.  
12601 Broken Bough  
Houston, TX 77024

**Mae Blanton Branch**

4th Wednesday, 9:30 a.m.  
Homes of members  
Marguerite Vernon, Pres.  
1213 Sherman Dr.  
Denton, TX 76201

**BRANCH NEWSLETTERS**

The editor thanks all branches that supply copies of their current newsletters, as these are often helpful. Some branches do not send newsletters, and they are requested to do so. The other officers who receive courtesy copies are also grateful for your support.

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## MINUTES OF THE BOARD OF DIRECTORS' MEETING

March 2, 1986

The board meeting of the American Begonia Society was held at Quail Gardens, Encinitas, Calif. President Margaret Lee called the meeting to order at 11:35 a.m. Aims and Purposes were read by First Vice President Arlene Davis.

Treasurer Eleanor Calkins reported a balance on hand as of January 31 of \$14,212.28 in the checking account and \$29,401.33 in the savings accounts.

The minutes of the January 12 meeting were approved as mailed. Board approved appointments of Marion Paris as audit chairman, Bob Bailey as bookstore manager, and Julie Panttaja as back issues chairman. Resigning Bookstore Manager Bobbie West was asked to submit a final financial report.

Reports were given by chairmen of advertising, awards, business, finance, nomenclature, and nominating committees. The nominating committee does not have a proposed slate of officers yet due to the flu epidemic that has hit Southern California.

Branch Relations Chairman Mabel Corwin was not present. A charter was sent in by a proposed branch in Atlanta. They were two members short of the required number (7). Membership Chairman John Ingles will call the new branch organizer, Russ Richardson, to explain that the board gave provisional approval of the charter on the condition that they have full membership status for the required number of charter members.

The inventory of the lending library is almost finished. Forty-nine books are missing, and there are very few begonia books left. Board approved the disbanding the lending library due to the difficulty of sending the the books out and the fact that the books were not returned. The board will decide upon the disposal of the books upon receipt of the inventory list.

Margaret Lee has received research materials of Carlton L'Hommedieu. Board authorized shipment to the nomenclature committee, if Carrie Karegeannes thinks it appropriate. The first volume of the *Catalog of Registered Cultivars* is now available from the bookstore. Price is \$4.00. California residents will have to add sales tax.

Interest in the members-at-large newsletter is picking up. It was clarified a "member-at-large" is a member of the ABS who does not belong to a branch.

The board approved an advance of \$50.00 for the new round robin director to purchase stamps and materials that she needs to start on the job.

The name of the 1986 convention has been changed to "Pua Nani Begonias." A site is still needed for the 1987 convention.

John Ingles sent 915 letters to people whose membership expired in 1984 and 1985. There is still a problem with people joining a branch or region and not joining the ABS as the Constitution requires. The board approved that the statement of policy based on the American Begonia Society Constitution and Bylaws concerning membership be sent to all branches and

regions. Board also approved the following inactive branches be removed from the ABS roster: Coastal Bend Begonia Society, Central San Joaquin Branch, Eastern New York Branch, Eastside Begonia Society, Long Island Branch, Seattle Branch, and South Seattle Branch. These are branches which have already disbanded or whose officers are not ABS members or that have not answered letters from the membership secretary. He will advise these branches by return-receipt requested mail of this action and ask for their charters.

The parliamentarian reported that the new Constitution and Bylaws have been printed. Copies will be sent to the branches along with these minutes and statement of policy mentioned previously.

The editor reported that a new printer has been selected, and the Jan-Feb issue is ready to go to print.

The Barkley Branch show will be April 5-6 in Oklahoma City. The Astro and Houston branches may consolidate.

The board approved joining the San Diego Floral Association. Their *California Garden* magazine will be a source for good advertising for this year's convention. Dues are \$10.00.

Next meeting was scheduled for May 4, 11:00 a.m., at the Corona Steak House, Corona CA.

The meeting adjourned at 4:00 p.m.

Jeannette Gilbertson, secretary

### MEETING CALL

The next board meeting will be held July 13 at 11:00 at the Corwin home in Vista, Calif. Those who wish to do so may bring their lunches. All directors and other board members will be notified by Secretary Jeannette Gilbertson. Others who wish to attend should contact her for information. The meetings are open to all members.

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### MORE PAGES

The last several issues of the *Begonian* have had more pages than last year, as a result of the increase in dues. The editor could use the services of a volunteer typist/keyboarder at her computer a day or two at a time on a regular basis. If you can assist, please phone.

## AMERICAN BEGONIA SOCIETY

Founded January 1932 by Herbert P. Dyckman

### 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, see inside front cover. Include a self-addressed envelope when you write.

**AT-LARGE MEMBERS** - Members who do not belong to branches are represented at board meetings by the members-at-large director. To find a branch in your area or to start a new one, contact the branch relations director for help.

**BOOKSTORE** - See information in this or next issue.

**JUDGING DEPARTMENT** - Mail order course for a member who wishes to become an accredited begonia show judge, \$10. Also available: a booklet on point scoring (\$2), the old (unofficial) classification booklet (\$2), information on fuchsia and fern judging, and other requirements to become a judge. Add \$1 for postage and handling on all orders and 6% tax for California residents.

**NOMENCLATURE DEPARTMENT** - Monitors newly published findings on *Begonia* names. Handles official international registrations of new *Begonia* cultivars and publishes these registrations. Gathers information about and assigns numbers to unidentified species.

**QUESTION BOX** - Prompt assistance with horticultural questions. Those of general interest will appear in the *Begonian* column.

**ROUND ROBINS** - Members exchange information about begonias and their culture through packets of letters which circulate among a small group of growers. There are dozens of these packets, called flights, on many specialized subjects. Contact the director for information.

**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 seeds are encouraged.

**SLIDE LIBRARY** - See information in this or next issue.

**SPEAKERS BUREAU** - The director maintains a list of speakers on begonias and related subjects.

## ABS Bookstore

**Growing Begonias.** Eric Catterall, 1984. Hard cover \$17.00

**Begonias:1980.** Japanese text by H. Arakawa with 431 excellent color photos. Paperback. \$25

**Begonias in Color.** Text by Yuji Murotani, color photographs by Hideaki Tatsumi. With English translation. \$12.50

**Les Begonia.** Chevalier's classic 1938 study of the *Begonia* as translated by Alva Graham from the French in 1975. Illustrated. Paperback. \$5

**Begonia.** Misono, 1974. Japanese text with 302 good color photos identified in English. Hardcover. \$30 English translation with no photos. Paperback. \$5.50. Order both for \$34.

**Ferns.** How to identify and grow 84 common ferns. Color photos. \$4.50

**Mother Nature's Secrets for Thriving Indoor Plants.** Fundamentals of indoor gardening. Color photos and information on 341 house plants. \$5

**Buxton Check List.** Reprints of original and supplements. \$20

**ABS Show & Convention Guide.** Compiled by Thelma O'Reilly. \$2.50

**Pamphlets.** *Begonias From Seed.* 35 cents each, with book order 25 cents. *Culture of Begonias,* 75 cents each, with book order 50 cents.

*All prices include shipping in the continental U. S. California residents add 6% sales tax. Send check or money order in U.S. currency payable to American Begonia Society.*

ABS Book Sales  
Bob Bailey, Manager  
4106 Madrona Road  
Riverside, CA 92504

**The Begonian.** Individual copies of back issues more than a year old. Price depends upon year. Write for information to Back Issue Sales.

**Begonian binders.** Keep your issues together. No repunching. Black. \$5.25 each.

Back Issue Sales  
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### Mailing Notice For Those With New Addresses

Issues sent by Third Class Mail are **not** rerouted to a new address unless the recipient has arranged for this service with the Post Office. The issues are destroyed, and the ABS pays for notification of the new address if it is available. Replacement copies are sent and all costs billed to the member. Prompt notification of address changes will eliminate this problem.

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