

December 1980

The BEGONIAN

The BEGONIAN

ISSN 0096-8684

Publication of the American Begonia Society

Copyright © 1980 by the American Begonia Society

THE BEGONIAN is published monthly by the American Begonia Society. Views expressed are not necessarily those of the society, its officers, or the editors. Third-class postage paid at South San Francisco, Calif.

Deadline for notices, advertising copy and manuscripts is six weeks before the first of the month of issue.

EDITORS—Karen Bartholomew and Chuck Anderson, 826 Santa Rita Ave., Los Altos, CA 94022. 415 948-5345 (evenings).

AMERICAN BEGONIA SOCIETY

Founded January 1932 by Herbert P. Dyckman

Aims and purposes

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

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

TO standardize the nomenclature of begonias.

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

TO issue a bulletin which will be mailed to all members of the society.

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

Services

See inside back cover

Elected officers

President Gilbert A. Estrada
7914 Springer St., Downey, CA 90242
Phone (213) 862-5976

Past President Nathan Randall
10079 West Lilac Road, Escondido, CA 92026

President-Elect Chuck Anderson
826 Santa Rita Ave., Los Altos, CA 94022

First Vice President Michael Kartuz
1408 Sunset Dr., Vista, CA 92083

Second Vice President Joan Coulat
4111 DePaul Ct., Sacramento, CA 95821

Treasurer John Ingels
8922 Conway Dr., Riverside, CA 92503

Secretary Arlene Davis
13390 Barker Lane, Corona, CA 91720

Appointed officers

Back Issue Sales Katharine Alberti
3322 Troy Drive, Hollywood, CA 90068

Bookstore Librarian Gil Estrada
7914 Springer St., Downey, CA 90242

Branch Relations Director Evelyn Cronin
84 Abbey Lane, Cotuit, MA 02635

ADVERTISING MANAGER—Pam Mundell, 2324 Connie Dr., Sacramento, CA 95815. 916 925-3647.

Advertising rates: \$12 per column-inch; \$35 quarter page; \$60 half page; \$115 full page. Discount of 5% for four or more consecutive insertions.

MEMBERSHIP SECRETARY—Subscription, dues, circulation inquiries and address changes: Elisabeth Sayers, 369 Ridge Vista Ave., San Jose, CA 95127. 408 258-4670.

Subscription: \$10 per year. Foreign (includes Mexico and Canada) \$10.50. First class mail (includes Mexico and Canada) \$14.50. Overseas air mail \$25. U.S. currency only. Back issues (current volume) \$1.

Chairman, Ballot Counting Committee..... Pearl Benell
10331 S. Colima Rd., Whittier, CA 90604

Business Manager..... Doug Frost
10622 Teal Dr., Garden Grove, CA 92640

Chairman, Awards Committee..... Kit Jeans
Rt. 1, Box 319, New Johnsonville, TN 37134

Classification Committee Chmn...... Mildred Thompson
310 A Hill St., Southampton, NY 11968

Clayton M. Kelly Seed Fund Director..... Joy Porter
9 Bayberry Lane, Framingham, MA 01701

Corresponding Secretary..... Frances Estrada
7914 Springer St., Downey, CA 90242

Historian Frances Estrada
7914 Springer St., Downey, CA 90242

Judging Department
Co-chairman Margaret Lee
1852 31st Street, San Diego, CA 92102
Co-chairman Pat Maley
1471 E. Madison, El Cajon, CA 92021

Lending Library..... Dolores Fernandez
4369 Tujunga Ave., No. Hollywood, CA 91604

Members-at-Large Director Duane Campbell
35 Valley Park, Owego, NY 13827

Nomenclature Department
Co-director..... Carrie Karegeannes
3916 Lake Blvd., Annandale, VA 22003
Co-director..... Thelma O'Reilly
10942 Sunray Place, La Mesa, CA 92041

Parliamentarian..... Clair M. Christensen
11276 W. Washington Blvd., Culver City, CA 90230

Public Relations Director Diane Fries
3531 Creeklewood St., Torrance, CA 90505

Research Director..... Corliss Engle
26 Edgehill Rd., Brookline, MA 02146

Round Robin Director..... Mary Harbaugh
Rt. 4, Box 343, Shawano, WI 54166

Round Robin Reporter..... Jan Clark
2120 Oak St., Grand Forks, ND 58201

Show Classification and Entry Chairman..... Pat Maley
1471 E. Madison, El Cajon, CA 92021

Show and Convention Adviser..... Jean Natter, M.D.
260 Bennett Ave., Long Beach, CA 90803

Slide Librarian..... Ralph Corwin
1119 Loma Vista Way, Vista, CA 92083

Speakers Bureau Director Doug Frost
10622 Teal Dr., Garden Grove, CA 92640

THE COVER: This stunning satiny rose-colored Rex Cultorum begonia is *B.* 'Venetian Red'. The photograph—which for all the world looks more like an oil painting—is by Tovah Martin of Logee's Greenhouses, which lists the cultivar in its catalog.

Easy to grow	The last in Elda Haring's series: <i>B.</i> 'Peace'	320
A tale of two plants	<i>B.</i> 'Maphil' and <i>B.</i> 'Cleopatra' by Jack Golding	321
Mildew	The latest word on control of powdery mildew	324
Another name change	"Nurii" is out; <i>B. nigritarum</i> is in by J. Doorenbos	326
Species ex Kew	A note about the September 1980 cover story	329
Round robins	328	Mini-ads 332
Question box	330	Seed fund 333
New cultivars	331	ABS news 334
Growing from seed	332	ABS services 335

NOTES/From the editors

Racking your brain to come up with a holiday gift idea for somebody special?

Here's an idea you haven't thought of:

A gift membership in ABS.

For a paltry 10 bucks, you can give a plant-loving friend a dozen *Begonians* and access to the seed fund, round robins, and all the other ABS services.

What other gift that lasts a whole year would be as cheap?

There still may be time to do it if you act *today*. Send a \$10 check and a note with the recipient's name and address (you must include zip code) to:

Holiday Gift Membership
 c/o Elisabeth Sayers
 Membership Secretary, ABS
 369 Ridge Vista Ave.
 San Jose, CA 95127

Elisabeth will send a gift notice to your friend right away.

At the same time as you are making somebody happy, you'll be helping in ABS' newly launched membership

campaign, Challenge '81.

We'll be spending the next year attempting to recruit one thousand new members before the start of the society's golden anniversary year, 1982.

More about that very soon. Meanwhile, please send off your order.

□

A season of cheer and goodwill provides the perfect opportunity for us to thank *The Begonian's* contributors—authors, photographers, and artists included—for a year's hard work, and for all of us to wish *you* happy holidays and great growing in the New Year!

—C.A. & K.B.



Easy to grow: B. 'Peace', a rex cultivar

Elda Haring

Years ago when we lived in Connecticut and became interested in the great variety of begonias available, we paid a visit to Logee's Greenhouses in Danielson, Conn.

We were overcome by the many gorgeous rexes. We purchased so many that they soon outgrew the limited space we had available in our small greenhouse. We took cuttings of those that at the time we considered easy to grow. The balance, then growing in 10-inch pots, we took to our local nursery, asking only the price of the pots. The nurseryman sold these readily at a handsome profit.

B. 'Peace' was among those we kept because of its satisfactory growth under fluorescent lights in the east and north windows and in the greenhouse. Here in North Carolina where growing conditions are quite different, we soon found that B. 'Peace' was un-

This is the last in Elda Haring's series on easy-to-grow begonias. Elda, of P.O. Box 236, Flat Rock, NC 28731, is curtailing her writing for health reasons.



B. 'Peace'

Photo/Walter Haring

happy in winter in the greenhouse where a minimum temperature of 55 degrees F. prevails during winter. Some plants lost most of their leaves but started to grow again in April.

Last spring I took leaf stem and wedge cuttings of this rex and now have lovely plants. One is growing under lights and one in an east window which receives bright light in summer but is shaded from direct sunlight by a huge oak and enjoys about two hours of morning sun in winter.

Under fluorescent lights, B. 'Peace' is overlaid heavily with silver and has a margin of deep rosy red and reddish veins radiating from the center where the leaf meets the stem.

In the window if the light is too bright, the leaf markings become much paler. Nevertheless, for the beginner who has become interested in rex begonias it is easy and well worth growing even though others are more spectacular—and more difficult.

As rexes prefer a fairly loose potting medium, I add to my basic potting mix (which contains some packaged topsoil, peat moss and sand, along with nutrients and lime) one part vermiculite and one of perlite to three of the basic mix. This provides the well-drained and loose potting mix in which they thrive.

During the growing season rexes are fed, half-strength, water-soluble fertilizer twice a month. In winter when they are no longer putting out new growth, I feed at quarter-strength once a month.

As our normal outdoor humidity is quite high I do not find it necessary to supply additional humidity for the rexes. However, in many less humid

Please turn to page 329



B. 'Maphil' as introduced by Mable Walker in 1952

Photo/Al Clark

B. 'Maphil', B. 'Cleopatra'—not the same

Jack Golding

Begonia 'Maphil' and *Begonia* 'Cleopatra' are similar, but separate, cultivars.

Begonia 'Maphil', a chance seedling of *B. bowerae*, was developed in 1951 by Mabel and Phil Walker of California and was registered in 1952 with the American Begonia Society as No. 11. The registration was published in *The Begonian* 21: 130. 1954.

A very clear photograph by Al Clark was on the cover of *The Begonian* 19: 213. 1952 and the following description by Jean Kerlin was given on page 222:

"*Begonia* 'Maphil' (pronounced May-Phil) is a very colorful dwarf rhi-

zomatous plant with a bushy habit of growth. The leaves are chartreuse to mustard yellow-green in color suffused with deep brown markings surrounding the veins and margins. The veins are light green on the surface, flushed with red on the underside of the leaf. The sinus or eye is also light green. The obliquely shaped leaves are shallow-lobed and average two to three inches across in size; the over-all leaf texture is velvety. The interesting point to note about *B. 'Maphil'* is the long eye-lashes on the leaf margin so typical of *B. bowerae*. The petioles are green with red color flecks at intervals, each fleck surrounding one hair."

Photographs of *Begonia* 'Maphil' were published by A. B. Graf in *Exotica* 2: 230. 1959; *Exotica* 3: 318. 1963; and *Tropica* 174. 1978.

His description in *Exotica* 3: 1549.

Jack Golding, a meticulous researcher and co-author of *The Species of the Begoniaceae*, lives at 47 Clinton Ave., Kearny, NJ 07032.

1963, is:

“‘Maphil’ (*bowerae* seedling), colorful dwarf plant with creeping rhizome and red-scaled petioles; small star on maple-shaped leaves chocolate-brown with chartreuse markings, the veins red, margins with eye-lashes.”

The first photograph I could find of *Begonia* ‘Cleopatra’ (*B.* ‘Maphil’ x ‘Black Beauty’) was published by A. B. Graf *Exotica* 1: 155, 1957. Dr. Graf advised he had taken this photograph in September 1955 at the greenhouses of Arndt’s Edelweiss Gardens, Robbinsville, N.J. The parentage of this cultivar was given to him, at that time, by A. H. Arndt.

I wrote to Mr. Arndt requesting if he could advise who originated this cultivar and when. He replied that his old records were destroyed in a 1965 fire and he could not furnish the information requested.

Dr. Graf also published photographs of *Begonia* ‘Cleopatra’ in *Exotica* 2: 208, 209, 215, 1959; *Exotica* 3: 295, 299*, 302, 1963; *Exotic Plant Manual* 116, 183*, 1970; and *Tropica* 160, 161, 1978.

His description in *Exotica* 3: 1545, 1963, was:

“‘Cleopatra’ (‘Maphil’ x ‘Black Beauty’), translucent maple-leaf, Nile-green with chocolate red areas toward margin; rhizomatous; clusters of perfumed, pink flowers.”

The description of *B.* ‘Cleopatra’ in *Exotic Plant Manual* 569: 1970 was almost the same but with the following addition: “Very attractive; more vigorous and rugged than ‘Maphil’; leaves become larger 4” to 5” across.”

To all of the above descriptions, I would add the following distinguishing characteristics of their different

**These are the same 1955 plants.*

leaf shapes.

B. ‘Maphil’—The basal lobes are rounded ascending regularly to the outer two of the four angled lobes.

B. ‘Cleopatra’—The basal lobes extend horizontally to angles; the palmate leaves have five or six angled lobes. On some plants, a few leaves may have the rounded basal lobes of its parent *B.* ‘Maphil’.



B. ‘Maphil’ leaf



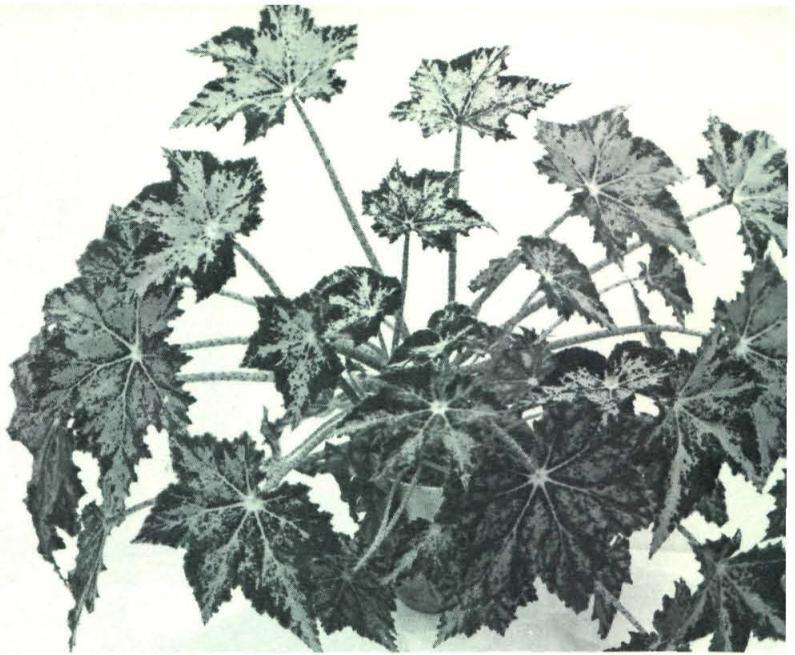
B. ‘Cleopatra’ leaf

The first mention of *Begonia* ‘Cleopatra’ in *The Begonian* was in Vol. 25, page 100, 1958, in a report of a New York City Flower Show.

These were treated as separate cultivars until 1960 when they were listed in Bernice Brillmayer, *All About Begonias* 128, 1960, as “‘Maphil’ or ‘Cleopatra’ (*bowerae* seedling) . . .” The photo on page 129 is *B.* ‘Cleopatra’, not *B.* ‘Maphil’.

The listing of these two cultivars as synonyms started in *The Begonian* 28:

B. 'Cleopatra'
as recorded
by Alfred
Byrd Graf in
1955



Photo/
Alfred Byrd Graf

138. 1961 and continued in various issues until the present time.

There is a very clear photo of *Begonia* 'Cleopatra' [marked *Begonia* 'Maphil' (syn. 'Cleopatra')] *Begonian*: 38: 205. 1971, by Brian Halliwell to illustrate his article "*Begonia* 'Cleopatra' in England" on pages 208, 209. This was followed by an "Editor's note: *Begonia* 'Maphil' was propagated by a commercial nursery and renamed 'Cleopatra'. . . ." I do not think this note is correct.

These other photos of the two cultivars have appeared in *The Begonian*: 27: 176, 1960, *Begonia* 'Cleopatra' (as 'Cleopatre')

31: 1, 1964, *Begonia* 'Cleopatra' (as 'Maphil')

35: 154. 1968, *Begonia* 'Cleopatra' (as 'Maphil')

38: 205. 1971, *Begonia* 'Cleopatra' (as 'Maphil')

38: 277. 1971, *Begonia* 'Maphil' (difficult to determine because of the drooping leaves)

42: 153. 1975, *Begonia* 'Cleopatra'

43: 47. 1976, *Begonia* 'Cleopatra'

(as 'Maphil')

Carrie Karegeannes summarized reports from ABS Round Robins concerning these cultivars:

"Vernia Routh, greenhouse grower and seller and Robin member, Louisburg, Mo., thought she would watch plants she had under each name. She took the plants, which had been obtained under the two different names, and placed them in her benches, giving the same light and care. She found that 'Cleopatra' made a larger plant, and darker, with more brown (grown in the same light), than 'Maphil'—on several plants of the same age. She thought, therefore, that they were not identical.

"Also Herb Warrick, Seattle, Wash., wrote me Jan. 6, 1965, that he had purchased plants under both names from supposedly reliable sources. The only differences he had seen were that 'Cleopatra' runs to yellow with brown markings, while 'Maphil' tends to light green with brown markings.

Please turn to page 325

Controlling powdery mildew: some findings

J. A. Quinn and C. C. Powell, Jr.

Powdery mildew is a devastating disease on tuberous begonias including *Tuberhybrida* and *Hiemalis* kinds. Research of this fungal disease at Ohio State University, partially funded by Mikkelsen's, Inc., of Ashtabula, Ohio, has investigated possibilities of controlling this disease on *Hiemalis* begonias (sometimes called "Rieger" or "Elatior" begonias) by cultural and chemical means. Some of our results are presented here.

Cultural control of mildew is very difficult on *Begonia*. Prevention of infection can be obtained by growing plants at constant temperatures of 84 degrees F. or more. This is not recommended because begonias generally do not grow well at this high a temperature.

We have found, however, that eradication of the disease on infected plants can be done by holding them at 90 degrees F. for six days. If protection from sunburning and excessive root drying is provided, this six-day treatment would seem to be a reasonably practical control measure.

We also discovered that keeping plants adequately and evenly watered will help keep the disease in check. Although this is not the complete answer, we do know that plants subjected to periods of drought stress became more heavily infected with powdery mildew in our experiments.

Recently, we have noted claims of control of the disease with products commonly found in the kitchen. No

J. A. Quinn is a graduate assistant and C. C. Powell Jr. an associate professor of plant pathology at Ohio State University, Columbus, OH 43210.

Table 1. Efficacy of products available to the home horticulturist in treating powdery mildew of *Begonia*

Treatment and rate per gallon	Mean Infections per plant ³
Control (no treatment)	25.6
Karathane 18.25W, ½ tsp. + Exhalt 800 ¹ , ½ tsp.	0.0
Bicarbonate of soda, 2 tsp.	1.6
Bicarbonate of soda, 2 tsp. + Exalt 800, ¾ tsp.	4.1
Lysol liquid cleaner, 2½ Tbls.	2.1
Lysol aerosol disinfectant moderate mist ²	8.4
Epsom salt, 1 tsp. + Exalt 800, ¾ tsp.	4.4
Epsom salt, 1 tsp.	8.8
Benomyl (Benlate 50WP), ½ tsp. + Exhalt 800, ½ tsp.	13.0

¹ Exhalt 800 is a spreader-sticker spray additive.

² Plant misted for three seconds from a distance of 8 inches. Treatment was phytotoxic.

³ *Begonia x hiemalis* 'Krefeld Orange' was used in these tests. Infections were counted one day after the last of four weekly sprays.

comparative tests using prescribed methods and including unsprayed control plants have been published. Therefore, we undertook tests of bicarbonate of soda, epsom salts, and Lysol products for control of powdery mildew in the fall of 1979.

B. 'Krefeld Orange', a highly susceptible *Hiemalis* variety, was potted in four-inch pots and placed on a shaded bench in a greenhouse. The spray materials, listed in Table 1, were applied four times at weekly intervals and mildew was introduced by blowing in over infected leaves onto sprayed leaves four days after the first spray and again four days after the second

spray had been applied. Counts of numbers of infections were made one day after the last spray.

Results show that all of the chemicals tested gave some control, but none were as effective as dinocap (Karathane). Benomyl did not perform well in our tests. This probably was due to the occurrence of a benomyl-resistant strain of mildew in our greenhouse. Benomyl-resistant mildews have been found throughout the world—this is one of the problems associated with its continued use. Lysol aerosol disinfectant should be avoided due to a high potential for plant damage.

More Maphil and Cleo

Continued from page 323

“Herb went on to say that in explorations among commercial growers (for some *rex* cv. information) he ran across *B.* ‘Cleopatra’ grown by the hundreds. He counted at least seven quite distinct patterns, he said, that might represent the full “*grex*” of ‘Cleopatra’ seedlings. They ranged from almost solid yellow to predominantly brown (but he didn’t say whether these different forms were in different houses or in same; side by side, or under different conditions), but he did add that he had noticed that his own ‘Maphil’ plants seemed to vary with the different environments in different parts of his long dugout greenhouse.

“So Herb suspected that the two different plants ‘Maphil’ and ‘Cleopatra’ could be “made to look exactly alike in just the proper conditions.” He planned to go back to his wholesale grower and buy some of the “many patterns” of ‘Cleopatra’ and grow them by number to see how many began to overlap—but I never heard more from him on whether he did

It is our belief that no mildew can be tolerated on a grower’s plants prior to sale. Of course, if this were always the case, home horticulturists rarely would have to deal with the disease.

Our research indicates that a repeated, preventive spray program is necessary on susceptible cultivars. Karathane (also sold as Mildex) would be a good choice. The use of a spreader-sticker probably would help as well. When using this fungicide, follow label instructions and try to avoid spraying opened flowers; Karathane has been known to burn flowers slightly under certain conditions.

this.”

Carrie also reported the color of the leaves on plants can vary from almost all chocolate in one season (little sunlight) to almost all chartreuse with just chocolate or maroon fleckings in another (lots of sunlight)—when grown in a window instead of under fluorescents. And she imagined that this would be true of both plants, if they are indeed two plants.

The plant on her bookshelf at the window in her office goes through these cycles all the time—you’d hardly believe it is the same plant but there remain, of course, some leaves of each color to prove it.

I think *B.* ‘Maphil’ is rare and I have not seen a plant with the rounded basal lobes as illustrated in the original 1952 photo. Because of the confusion in the literature, I suspect that most of the plants that are labeled *B.* ‘Maphil’ are actually *B.* ‘Cleopatra’.

Begonia ‘Cleopatra’ is a very common, vigorous, easy-to-grow plant seen often in most garden centers.

Begonia ‘Maphil’ and *Begonia* ‘Cleopatra’ are sufficiently distinctive from each other to be separate cultivars.

A farewell to Begc

J. Doorenbos

On January 24, 1980, the director of the ABS Seed Fund sent me a small sample of begonia seed, marked 'Philippine species.' I succeeded in growing four plants from it, which started to flower in July. They show minor differences, such as in leaf shape, but there can be no doubt that they belong to one species. The surprise is that this is unmistakably the one we are growing as *Begonia nurii*. As this is a species from Malaya, there is clearly something wrong here, so I decided to have a closer look at the species concerned.

Begonia nurii was described by Edgar Irmscher in a paper called "Die Begoniaceen der Malaiischen Halbinsel (The Begoniaceae of the Malay Peninsula)" published in 1929. As is habitual with this author, there is a very detailed Latin description, but no picture. The plant had been discovered by Nur and Foxworthy in 1924 on cliffs near Sungei Ketei in Kelantan. There are the only specimens known—a confirmation of Irmscher's statement that all species of the section *Reichenheimia* are rare.

The pertinent question for us is: Is this the species we are growing? The answer is: It is not. The true *Begonia nurii* has oblong-ovate stipules 6-8 mm long and 1.5 to 2.5 mm broad at the base, leaves that are reniform to orbiculate without a distinct tip,



Begonia nigritarum Steud (*B. nurii* t

few-flowered inflorescences (a simple dichasium), short pedicels (2.5 to 4 mm) and tepals that are hairy at the back. In the plant we grow the stipules are 20 mm long and 12 mm broad at the base, the leaves are broadly oval with an acute tip, the inflorescences many-flowered (up to 6 dichasial branchings), the pedicels are up to 15 mm long and the tepals glabrous. The most important difference, however, is that in the true *B. nurii* the placentae are simple, whereas in our plant they are bifid, the lobes thickly set with ovules on both sides. This takes our plant right out of the section *Reichenheimia* and puts it in the widespread and much larger section *Diploclinium*.

What do we know about *Begonia "nurii"*? Not much, I'm afraid. The

Dr. Jan Doorenbos, internationally recognized Begonia authority, is professor of horticulture at Agricultural University, P.O. Box 30, 6700 AA, Wageningen, The Netherlands.

rii''



Photo/Reyer Jansen

name appears regularly in *The Begonian* from 1970 onward. In May 1973 there is an article by Mike Kartuz who discusses its use in bowls. He states that it was grown by Chuck Tagg in California in 1969 and adds "hearsay suggests that it was sent as seed in a Round Robin from Britain."

There is another possibility, however. Carrie Karegeannes drew my attention to page 207 of the October 1950 *Begonian*, where Florence Carrell of the "Armchair Explorers" (forerunner of the Seed Fund) writes: "From Singapore I received seeds of *Begonia Nurii* which is a species native to Malaya. It is rather like a miniature *B. rex* but it flowers much more freely and grows not more than 6" high." The plant grown at present as *B. nurii*

could have originated from this material. In that case, the erroneous identification was made at Singapore, more than 30 years ago. (A color photograph of the plant is on the cover of *The Begonian* of October 1976.)

There is no need to describe *B. "nurii,"* as it is widely grown. What to call it, however, if it has no right to the name *B. nurii*? Taking the fact that it may be a Philippine species as a clue, I have tried to identify it with the help of the key given by Merrill in his paper "The Philippine species of *Begonia*" of 1911. This took me to *Begonia nigritarum* Steud. According to Merrill, "this variable species is the most common and widely distributed one in the Philippines, occurring at low and medium altitudes." He further writes: "As to the name of the species, judging from Kamel's description of *Acetosa nigritarum*, on which Steudel based the name *Begonia nigritarum*, I am of the opinion that there can be no doubt that Kamel's plant was quite the same as the species usually grown as *Begonia rhombicarpa* A.D.C." To which I can only add that Kamel's description was published in the supplement to vol. 3 of John Ray's *Historia Plantarum* (1704), and that the epithet *rhombicarpa* ("with diamond-shaped fruit"), although superfluous, is very apt.

As long as my identification is not backed up by herbarium material from the Philippines it remains tentative. I do hope that I'm right, however, and that we don't have to start looking for yet another name for this charming plant.

ROUND ROBINS/ *Winter's do-it urges*

Jan Clark

Christmas greetings are flying in the Robins. It's been an eventful year for robin members. They weathered winter rains, spring floods, and being fried to a crisp in the summer. Several even had to contend with a volcano in their laps! Through it all, even though many collections suffered greatly, members emerged smiling and supporting each other.

It was a year to collect snapshots and memories of beautiful plants, exciting shows, and a never-to-be-forgotten ABS convention.

□

It seems like winter brings out the do-it-yourselfer's urges like no other season. Anne Shore, California, undertook a project this year with gratifying results. She built a 7-by-10-foot lath-house. While small, it can accommodate many plants, with step shelves on the back for the larger ones and wall pockets for others.

She reports: "It is so restful and cool, I really do like it. Anytime you get more space for plants it will be well worth all the effort; it will be filled quickly!"

G. Art Sackenruther, California, re-roofed a greenhouse, and learned a lesson about the superior light transmission of new greenhouse materials. "There is a great difference between ordinary fiberglass and products that are made specifically for greenhouse use. I grow most of my large cane-type begonias in this house and before

Jan Clark is round robin reporter.

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 Rt. 4, Box 343, Shawano, WI 54166.

I realized it they were badly burned."

Glenn Maynard, California, installed a hydroponic watering system. He reports: "It took more time than planned to install, but now that it's going, it is impressively simple to operate. I have done little more than to look at it each day to see that it is working properly, and to check the nutrients every few days with a simple test kit.

"The troughs, lined with black plastic, are filled with perlite about 1½ inches deep. The solution drips into one end and is caught as it comes out the other end, which is a few inches lower than the upper end.

"In our set-up it drips from the upper benches to troughs underneath, which provide space for more plants under lights. These troughs slope in the opposite direction and return the solution back to the same end of the greenhouse as it started. Here it is caught in an underground holding tank containing a pump, which returns the solution to an upper container.

"A float switch starts the pump when the container begins to empty. That's all these is to the system, folks—the solution just goes round and round!"

□

There have been many excellent suggestions for terrarium growers in recent robins. Alta Soule, California, urges growers to put some charcoal in the bottom, then a layer of sand, then soil and plants. The charcoal keeps the soil sweet. She adds: "And be careful not to overwater at the start!"

Mike Ludwig, California, declares that grooming is the only major care

once a terrarium is established. Watering is seldom done and feeding almost never. He has a terrarium that is 2½ years old that has been fed all of twice, and that at one-quarter strength.

Lorraine Simmons, Wisconsin, uses a tiny fern in her large terrariums. When she puts plants of many colors together, she adds a few of these ferns to separate the colors.

Casey Marchlewicz, Illinois, describes some of her favorite ferns and begonias for landscaping terrariums: "I like the miniature 'Fluffy Duffy' fern that has fronds 3 inches long and ¼ inch wide. I also have a tiny maidenhair that grows only 1½ inches high. *Selaginella brownii* is a must as a ground cover. Begonias that I use in landscapes are *B. 'Smidgens'*, *B. bowerae* var. *nigramarga*, *B. prismatocarpa*, *B. 'China Doll'*, and *B. 'Petit Elegante'*."

More easy to grow

Continued from page 320

areas of the country many find a need to increase humidity to prevent browning of leaf edges. Some use pebbles in a tray filled with enough water to cover the pebbles but it is important to set the pots in saucers for if pots sit in water for any length of time root-rot will result.

Perlite or vermiculite kept constantly wet and covered with ⅛-inch hardware cloth on which to set the pots is a satisfactory solution to the humidity problem, too. Where available, egg-crate fluorescent light louvers cut to fit the trays serve as a stable base on which to set the pots over the water-filled tray.

Board meets Jan. 19

ABS directors will meet Monday, Jan. 19, at 7:30 p.m. at Fullerton Savings and Loan Assn., Anaheim, Calif.

A postscript to *B. species ex Kew*

M. L. MacIntyre

I was very interested in the article on *B. species ex Kew* by Bob Haussler in the September *Begonian* because I had quite a lot to do with it.

The Royal Botanic Garden, Kew, received this plant from J. A. R. Anderson in 1965 and I was given a cutting when I visited Kew in May 1967. The plant depicted on the cover of the January 1973 *Begonian* was mine and I am fairly sure that at the time only Kew and I had it.

My plant grew well and in December 1973 I sent seed of it to Rudolf Ziesenhenné as "sp. from Kew." In January 1974 I sent seed to Mildred Thompson. It was from these two

sources that it became distributed in the United States.

In February 1974 I sent seed to Professor J. Doorenbos as "unnamed species from Kew" which resulted in his article in the September 1976 *Begonian*.

If I had not been given a cutting, this lovely plant would have been lost, as Kew lost its and I was able to replace it.

(*The B. incarnata* x *B. species ex Kew* hybrid mentioned in the Bob Haussler article in September is *B. 'Aluminum'*. —Editors)

PORTER'S TROPICALS, INC.

*Begonias Ferns Rare Plants
Collector's Items*

Open Mon. thru Fri. 9-4

or by appointment

19102 Bond St., Orange, Ca. 92669

Shipping
\$50 minimum
(714) 997-2581

Begonia hybridizer M. L. MacIntyre lives at The Cottage, New Platt Lane, Cranage, Holmes Chapel, Crewe, CW4 8HS, England.

QUESTION BOX / *An unusual rooting problem*

Elda Haring

Question: I planted 200 leaf cuttings. On four or five leaves, plantlets came at the sinus of the leaf, leaving a long rooted stem. My *B. decora* has light leaves way up there. How do I make a good plant from this?

Answer: *B. decora* is usually grown as a bowl or terrarium plant. I would cut off the plantlet with an inch of stem and place in mix in a bowl to re-root. Let the old rooted stem remain, be patient and eventually a plant will grow from it. In the future cut the leaf stem to about 1½ inches and insert in the propagating medium right up to but not touching the leaf bottom.

Question: When planting leaf wedges, how far up do you strip the main vein?

Answer: I have never stripped the main vein. Cut the wedges so they

Send questions about begonia growing to Elda Haring, P.O. Box 236, Flat Rock, NC 28731. She'll mail you her reply promptly.

come to a blunt point and insert ¼- to ½-inch into mix.

Question: In repotting a rhizomatous plant with long rhizomes, do you scrape them to encourage roots as some do to African violets with long necks?

Answer: I assume you wish to re-root the long rhizomes you have cut off. I never scrape these nor do I suggest it for I do not feel it is necessary and could damage the rhizome. I never do this with African violets, either, but merely rub off stubs of old leaf stems with my fingers. I rarely have a failure.

Question: We do not have Jiffy Mix in the West where I live but as many media call for it can you tell me what the formula is for this material?

Answer: Jiffy Mix was formulated at Cornell University. There are now others on the market such as Redi-Earth and Fertil Mix, which are the same. They may be bought by mail order from seed catalogs. They are made up of fine vermiculite, screened peat, nutrients and lime. The exact formula is not listed on the package.

Question: All of my cane-like trailing begonias like *B. 'Splotches'* and *B. limmingheana* are losing their leaves. They develop little spots and the leaves turn yellow before dropping.

Answer: *B. 'Splotches'* and *B. limmingheana* (now known as *B. procumbens*) are classified as trailing-scandent (scandent means climbing). They are not in the cane-like trailing group.

It might be that the rootballs have become too wet. Remove from pot or basket, check root systems and, if the soil is very soggy, take off as much soil as you can and repot in dry medium. Water sparingly.

.....OFFER EXTENDED.....

"Schultz-Instant"
CONCENTRATED SOLUBLE
Fertilizer

20-30-20
with Model 5 "MIXERATOR YARD GUN"



¼ teaspoon per gallon water grows vegetables, flowers, roses, trees, shrubs, lawns, everything for yard & garden.

The patented non-clogging "Mixerator" Yard Gun makes application easy on large areas.

Available at your store or send \$7.95 with this ad for 5 lbs Schultz Fertilizer plus a \$2.95 "Mixerator" Free. (Estate Size 25 lbs with 2 "Mixerators" \$30.00). Free delivery. Extended, limited offer. Immediate shipment.

Schultz Company
Dept. ABS 11730 Northline, St. Louis, MO 63043

Carrie Karegeannes and Thelma O'Reilly, nomenclature co-directors

In the citations of cultivar parents, the female (seed) parent is listed first.



B. 'Bolero'

Begonia 'Bolero'

No. 796—*Begonia* unnamed x unnamed 'Bolero'

Rex Cultorum group; rhizomatous. Obliquely ovate leaves are black with large, deep-rose blotches between the 7 veins, measure 3" x 5", and have a serrate, ruffled margin. Heavy-textured, the leaves are thick with sparse hairs on the surface—nearly glabrous. Petioles are 3" long and stipules are persistent. Deep-rose-pink flowers, arranged in a few-flowered cyme on a 1½" peduncle, have 4 male and 5 female, rounded, 1½" x 1½" tepals with waxy texture and are ever-blooming. This distinct, compact cultivar has a lovely sheen on its leaves. The originator reports it seems quite mildew resistant. Originated in 1978 by Patrick J. Worley, 1408 Vista Drive, Vista, CA 92083; first bloomed in 1979; first distributed in 1980; first published in Kartuz Greenhouses 1980 catalog. Registered Nov. 9, 1979.

Applications to register *Begonia* cultivars may be obtained from Thelma O'Reilly, 10942 Sunray Place, La Mesa, CA 92041. Each must be typed or printed in ink. A \$2 check or money order payable to the American Begonia Society must accompany each completed application. Photos, drawings, and/or dried specimens to accompany applications are encouraged. ABS is the International Registration Authority for *Begonia* cultivar names.

Begonia 'Abu-Dhabi'

No. 797—*Begonia bowerae* var. *nigramarga* x *violifolia* 'Abu-Dhabi'

Rhizomatous. Leaves are deep forest green with dark markings, obliquely ovate, acuminate, 2½" x 2½", with serrulate margin; sparsely hairy, glossy, and bullate surface; and 6 depressed veins. The 3½" petioles are red and moderately hairy; small stipules are papery and persistent. Flowers are light pink in few-flowered cymes in winter, held above the foliage on 3½" peduncles. The 4 male and 5 female tepals are rounded, measuring ¾" x ¾". This small begonia is distinguished by the subtle, deep color along the veins and a bullate texture derived from the pollen parent. It is especially suitable for growing under lights. Originated in 1972 by Patrick J. Worley (address above); first bloomed in 1974; first distributed in 1978; first published in Kartuz Greenhouses 1978-1979 catalog. Registered March 3, 1980.

Begonia 'Alhambra'

No. 798—*Begonia olsoniae* x *gebrtii* 'Alhambra'

Shrub-like with 12" stems. Glabrous bullate leaves are bronze with depressed green-gold veins and are obliquely broad-ovate to nearly round, 9" x 6", with entire margin. Petioles are 4"-6" and webbed with white hairs. Persistent stipules are papery. White flowers with rounded tepals include unequally winged pink ovaries on the female. Male flowers, with 4 tepals, measure 1¾"; females, with 5 tepals, 1". Loose, few-flowered cymes are borne on hairy 8" peduncles, blooming intermittently over a long season. B. 'Alhambra' is distinguished by leaves with the basic pattern of its seed parent and heavy bullate texture of the pollen parent. Color remains excellent even under low light conditions. Originated in 1977 by Patrick J. Worley (address above); first bloomed in 1979. Registered March 3, 1980.

GROWING FROM SEED/ *Seed damage in the mail*

Joy B. Porter

With the help of Kingsley Langenberg of Illinois, I conducted several experiments in mailing seeds—making duplicate orders with a certain number of seeds in each packet, but with a different packing material around each lot.

At his end, King patiently counted, using a microscope, each whole seed and the number of seed fragments.

I knew that each mailing was hand-cancelled on my end, but on some a second cancellation indicated that the piece had gone through a cancelling machine after it left Framingham. This should not happen, but did more than once in the tests.

Our conclusion: no sort of packing can protect from breakage in the cancelling machine. However, if the piece

Write about your seed growing experiences to Joy B. Porter at 9 Bayberry Lane, Framingham, MA 01701.

Plant Shop's Botanical Gardens

New Begonia Catalog \$2.00 (incl. postage)—over 100 drawings and 600 plants listed—refunded with first order. Staghorn Poster \$4.00 (incl. postage). Inquire about rare plant catalog.

18007 Topham, Reseda, CA 91335
(213) 881-4831 Open Wed-Mon, 9 am-5 pm

of mail is more than one-fourth-inch thick due to heavy packing, theoretically it cannot be handled by a cancelling machine so must be processed by hand. This requires 22 cents postage—the extra 7 cents for that extra handling.

If you wish your order to be sent in this manner, please add 35 cents to your order and I will send it in a padded mailing pack with the proper postage. Include your name and address on the order form since you will not be sending the usual stamped, self-addressed envelope. (A step in the right direction, I hope, toward answering that exasperating question: “Why didn't my seeds germinate?”)

Speaking of germination, I think tuberous seed (species particularly) needs a dormant period to germinate. All the seed offered in November and the two tuberous species offered this month have had 6 weeks in my refrigerator with the exception of *B. acaulis* which I had been making right up to mailing time. If you got this one, I suggest you give it two or three weeks in a tightly sealed container in the refrigerator — *not* the freezer — before planting.

BEGONIAN MINI-ADS

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

Begonias. Blue ribbon winners. Odd, Rare, Unusual. Price list available. Tropical Greenery, formerly Begonia Paradise Gardens, 22140 S.W. 152 Ave., Goulds, FL 33170. (305) 248-5529.

Hundreds of begonias. Send for descriptive catalog, \$1. Millie Thompson, P.O. Drawer PP, Southampton, NY 11968.

Mini-ads are \$1 per line per insertion with a minimum of \$4. A line is about 36 characters. Payment must accompany order. Send to Pam Mundell, advertising manager, 2324 Connie Dr., Sacramento, CA 95815.

Violets - Begonias - Episcias
Cuttings only. Send 35¢ for list.
Wilson's Greenhouse, Route 1
Box 165-4 Ozark, MO 65721

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

SEED FUND/ *An offering of yellow-flowering B. pearcei*



B. pearcei, the yellow-flowering tuberous species

Photo/Alfred D. Robinson Collection

Joy Porter, director, Clayton M. Kelly Seed Fund

- DC 1 — *B. sanguinea*: Shrub-like with bare, thick olive-green leaves, blood-red beneath, and small white flowers in spring. I saw this Brazil species beautifully displayed in a begonia exhibit in the visitors' center at Glasgow Botanic Gardens under the direction of E. W. Curtis, curator. per pkt. 1.00
- DC 2 — *B. acutifolia*: Shrub-like species introduced from Jamaica by Sir Joseph Banks in 1790 and often called "acuminata" because of its small, pointed leaves which are toothed and rough-hairy. Red-green stems and white flowers in winter. In Jamaica it is called "Wild Rhubarb" because of its acid leaves. per pkt. 1.00
- DC 3 — *B. acetosa*: Although this rhizomatous begonia from Brazil is classified as large-leaved, its distinctive beauty may be enjoyed long before it outgrows your space. Its rounded, soft-hairy, dark-green leaves with ruby-red hairs beneath and white flowers in spring make it outstanding. per pkt. 1.00
- DC 4 — *B. sutherlandii* ex Edinburgh (Botanic Garden): a fascinating follow-up to the tuberous listing in November; its claim to fame is short white hairs on the leaves, and the same orange flowers as on its glabrous counterpart. per pkt. 1.00
- DC 5 — *B. pearcei*: Another beautiful low-growing tuberous species with yellow flowers and velvety, small leaves marked with light- and dark-green-brown. The modern Tuberhybrida begonias owe their yellow flower tones to this species from Bolivia. per pkt. 1.00
- DC 6 — Semperflorens cultivars including white, red, pink, rose, and picotee, some with bronze leaves. Mixed. per pkt. 1.00

Send orders to Joy Porter, 9 Bayberry Lane, Framingham, MA 01701. Include self-addressed, stamped envelope. 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.

Foreign orders, please note: US airmail rates of 31¢ per half-ounce are being raised to 40¢ January, 1981. Please include \$1.20 postage fee with your order.

ABS directors adopted a \$40,100 budget for fiscal 1980-81 at their Oct. 20 meeting, more than \$3,600 higher than the 1979-80 budget totalling \$36,433.

Nearly all of the increase is due to projected cost hikes for publication of *The Begonian*. The new budget estimates \$4,000 income from the 1981 annual convention and \$27,000 in membership dues income—approximately matching the convention income from this year and an increase of about 200 members from now.

The budget as adopted has a \$50 surplus. Major expenditures will be \$33,800 for *The Begonian* and membership secretary expenses, \$1,000 for seed fund expenses, and \$900 for the membership secretary's allowance.

Chuck Anderson, chairman of a new year-long membership campaign, reported that membership should rise by 1,000 by the end of 1981, although the budget does not depend on such a large increase. He said the campaign would begin soon.

Some new directors

President Gilbert Estrada named and ABS directors ratified on Oct. 20 a slate of board members for 1980-81, including four new appointments.

Pearl Benell was named chairman of the ballot counting committee, Frances Estrada corresponding secretary, Jean Natter show and convention adviser, and Pat Maley show classification and entry chairman.

Joan Coulat was named to chair a new

constitution and bylaws committee and Charles Richardson to chair finance and audit committees. These positions do not carry board membership.

Other directors and committee heads were reappointed.

IRS audits society records

The U.S. Internal Revenue Service has completed an audit of ABS financial records and found no improprieties, President Gilbert Estrada reported to directors Oct. 20.

He said the IRS called its review a "routine audit" and informed him it would be sending the society a letter closing the case. But Gil said he had not received the letter yet.

Elsa Fort Christmas party

Elsa Fort Branch will recognize Worthy Green, husband of Branch President Helen Green, for his help in staging branch shows with a certificate to be presented at the branch's Christmas dinner Saturday, Dec. 6.

The dinner and party will be at 12:30 p.m. at Neros Woodbine Inn, Route 73 at Remington Avenue, Pennsauken, N.J.

FULL COLOR FUCHSIA CALENDAR

\$3.50
ea. postpaid

Has seven beautiful 6" x 8½" fuchsia favorites by a famed flower photographer. A great gift! Get yours today. Send \$3.50 to Anne deFord/Flowers in Print, P.O. Box 293, South Laguna, CA 92677. Calif. residents add 6% sales tax. Your satisfaction guaranteed.

DISCOUNT PRICES FOR BRANCHES & CLUBS

Seeds of new *Streptocarpus* and *Begonias* plus seeds of rare and exotic plants from collectors worldwide. Yearly subscription to newsletters and seed lists. USA \$5.00, Foreign \$6.00 (US). RARE SEEDS, PO Box 616B, Silverton, OR 97381.

CAUTHRON

is here to stay with the best quality—prompt service—low prices and

GUARANTEED SATISFACTION

All *Begonias*—\$1.75 ea.

Send long stamped envelope for free descriptive list.

We are now known as:

C & C Growers
Rt. 2 Box 356
Choctaw, Okla. 73020
(405) 391-2133

ABS SERVICES

These services are available to all ABS members. For names and addresses of department heads and other officers, see inside front cover.

AT-LARGE MEMBERS—Services for members who don't belong to branches are handled by the members-at-large director. Contact him 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 monthly 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 editors. 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 1978. Back issues less than a year old are ordered from the membership secretary for \$1 each.

BOOKSTORE—Books on begonias and related subjects can be purchased mail-order from the bookstore librarian. Contact him for a list of books available. Include a stamped, self-addressed envelope. The bookstore also sells reproductions of antique begonia prints.

JUDGING DEPARTMENT—The judging department offers a course by mail with which you can learn to become an accredited begonia show judge. Also available are a booklet on point scoring, information on fuchsia and fern judging, and other requirements to become a judge.

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. Include a stamped self-addressed No. 10 envelope.

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*.

RESEARCH—The research department conducts a Grow and Study project in which members experiment with various begonias and compile their findings. The department also has other activities, including the review of requests for ABS backing of outside projects. For details, contact a co-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.

**AT LAST! AVAILABLE IN ONE VOLUME
HISTORY • CULTURE • CLASSIFICATION**

BEGONIAS

TIMES BOOKS will be publishing our book entitled *BEGONIAS*. The publication date is planned for early 1981. *BEGONIAS* will be available in bookstores and we will be selling it by mail order.

*Information on 2,475 species and cultivars
Begonias in all growing environments
Extensive glossary and bibliography
All the latest information available*

• 384 PAGES • PRICE \$35

WOULD YOU LIKE US TO RESERVE
AN AUTOGRAPHED COPY OF THIS BOOK FOR YOU?

If so, send **NO MONEY** now; just send name and address to
Ed and Millie Thompson
P.O. Drawer PP, Southampton, N.Y. 11968

**OVER 850 ILLUSTRATIONS • 150 IN COLOR
700 IN BLACK AND WHITE**



Begonias/Episcias/ African violets

Cuttings only—Catalog \$1

Kit Jeans The Gift Horse Greenhouse
Rt. 1, New Johnsonville, TN 37134

ASTRAL DOME TERRARIUMS

Mail order catalog

CAL-MIL PLASTICS

6100 Paseo Del Norte,
Carlsbad, California 92008

The Indoor Light Gardening Society of America, Inc., Dept. B, 128 West 58th Street, New York, NY 10019. Dues \$8.00. Magazine LIGHT GARDEN published 5 times yearly, cultural guides, seed exchange, round robins, chapters, slide library.

JOIN THE FERN EXPERTS

Have fun in the

Los Angeles Int'l Fern Society

Membership only \$10.00 per year

Monthly LAIFS Journal, Fern lessons, Robins, Spore Store, Books, Educational programs.

14895C Gardenhill Dr., La Mirada, CA 90638

ANTONELLI BROTHERS

2545 Capitola Road
SANTA CRUZ, CALIFORNIA 95060

36-page color catalog 25 cents

Join the NATIONAL FUCHSIA SOCIETY

MEMBERSHIP \$9.00 per year
includes monthly FUCHSIA FAN

"The New A to Z on Fuchsias", a hardcover book,
\$11.95 plus \$1.00 shipping (residents add 72¢ tax)
Mail to: National Fuchsia Society, Dept. B
340 Moss St., Laguna Beach, CA 92651

BEGONIAS, GERANIUMS, EXOTICS
FERNS, OXALIS, CACTI, HERBS

1980-81 Catalog With Color—\$2.00

LOGEE'S GREENHOUSES (Est. 1892)

55 North Street, Danielson, Connecticut 06239

BEGONIAS

REX BEGONIA SEED

RUDOLF ZIESENHENNE

\$1.00 per pkt plus 15¢ postage
Calif. residents add 6% Sales Tax

1130 NORTH MILPAS STREET
SANTA BARBARA, CALIFORNIA 93103

"Schultz-Instant"
LIQUID PLANT FOOD
10-15-10
Concentrated, High Analysis — All Purpose — 10-15-10 "Starts and Feeds" all Plants Indoors and Outdoors.
Available at your store or send \$1.25 for 5/8oz, \$2.50 for 12oz (includes mailing).

"Schultz-Instant"
SOLUBLE FERTILIZER
20-30-20
Concentrated, High Analysis — All Purpose — 20-30-20 crystals. Grows Vegetables, Flowers, Roses, Trees, Shrubs, Lawns, Etc., in Yards, Gardens, Greenhouses.
Available at your store or send \$7.95 for 5 lb (includes mailing).

SCHULTZ CO. — St. Louis, MO 63043
SEND FOR OUR FUND RAISING OFFER

SPOONIT[®]

"GETS THINGS GROWING!"

Gives exceptionally fast results when used on flowers, ferns, shrubs, trees and lawns. May be used for foliar feeding

get 1 lb. for

\$3.50 pp

from

PLANTSMITH

1924 Plymouth St.

Mountain View CA 94043



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

Address correction requested

Non Profit Org.
U.S. POSTAGE

PAID

Permit No. 655
South San Francisco, CA