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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.
- T0 bring into friendly contact all who love and grow begonias.

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See inside back cover

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INSIDE/May 1981

THE COVER: This popular creeping species from Brazil, once known as "Brazil species No. 9" and more recently given the designation of U009 in the ABS unidentified species numbering system, finally has a real name: Begonia thelmae. The specimen in the photo, grown by Mabel Corwin of Vista, Calif., was photographed by its namesake. Thelma O'Reilly of La Mesa, Calif. See articles on pages 114, 116, 117. Begonia californica Dr. J. Doorenbos suggests it's really B. boissieri 108 How to hybridize Kingsley Langenberg finds it easy......111 Begonia thelmae Lyman Smith, Dieter Wasshausen make it official......114 Carrie Karegeannes, Thelma O'Reilly trace its history 116 The board126 Round robins118 Question box 120 Convention news ... 124 ABS services 127 New cultivars121 ABS news125 Mini-ads127

NOTES / From the editors

Publication of this issue of *The Begonian* makes official the new name, *B. thelmae*, for the old Brazil species No. 9. We salute ABS nomenclature co-director Thelma O'Reilly for being chosen by Smithsonian botanists Smith and Wasshausen to be the plant's namesake.

Thelma is a frequent contributor of articles and photographs to this magazine. Less known, however, is her extensive behind-the-scenes work in support of the editors. Often we are in touch by phone to double-check a plant name or other small but vital nomenclatural detail.

Our mailman by now must have memorized her address and that of codirector Carrie Karegeannes because we are in almost constant correspondence.

Getting one of those phone calls or finding an O'Reilly letter in the mailbox is always a psychological boost, too, because of Thelma's unfailing enthusiasm, humor, and grace.

Cheers!

The phone rang the other day—it was a member from Laguna Hills,

Calif., on the Orange County coast. Her inquiry, made to us only because she wasn't sure who else to call, demonstrated that ABS is growing as any healthy organization should.

The question was: How do I go about starting an ABS branch?

The next question was: How do I get through all the hassle involved?

Our answer to the first question was simple: Collect the names of seven begonia lovers who want to join and write to branch relations director Lynda Goldsmith.

Our answer to the second was even simpler: There isn't any hassle.

Lynda, who address appears on the facing page, is eager to help you form a branch for fellowship and mutual begonia-growing assistance. It really doesn't matter if you are in the middle of nowhere or in a populous region like Orange County, which already has three branches, all inland.

Other ABS officers are standing by to serve you, too, with books, growing advice, help in finding a speaker, and in other ways. Please check the ABS services list on page 127.

—C.A. & K.B.

B. californica: Is it really B. boissierii?



Young female flowers of B. californica with enveloping bracts

Top of flowering plant of B. californica
Brandegee



1. Doorenbos

In *The Begonian* of March 1978, Martin Johnson drew our attention to *Begonia californica* Brandegee and added. "Let us hope some adventurous begonia collector can rediscover *B. californica* soon and put our hybridizers to work." Scott Hoover, surely an "adventurous begonia collector," rose to the bait, and in the October 1978 *Begonian* he gives a gripping account of how he drove all the way to Baja California to hunt for this obscure species, and triumphantly brought it back.

I was lucky enough to get a sample of seed and have now been growing *B. californica* for two years. The first year the plants became very long and spindly, possibly because in summer days are much longer in Holland than in Baja California, which has the double effect of promoting internode length and retarding flowering.

In the fall, stems stopped growing and tubers were formed, after which the plants became senescent and died. We kept the tubers dry at room temperature during winter, and replanted and gently watered them in spring. They were slow in sprouting but once they did the plants grew rapidly. They were sturdier than in the previous year (possibly because growth had started later in the season) but nevertheless reached more than twice the height given by Brandegee.

As the species is new to cultivation, I will give a short description. The stems are reddish and glabrous, up to

Dr. Jan Doorenbos directs the extensive Begonia collection at Agricultural University, P.O. Box 30, 6700 AA, Wageningen, The Netherlands, where he is professor of horticulture.



B. californica inflorescence, showing fused bracts at right

120 cm (4 ft.) high with a few slender branches from the axils of the lower leaves. The petioles are long and glabrous but for a ring of bristles at the top. The leaves are very symmetrical, oval in outline with a short acuminate tip, usually 9-nerved, serrate to crenate at the edge. The basal ones are up to 17 cm long and 10 cm broad, the higher ones becoming progressively smaller and narrower. The upper side is dull green with short dark brown dashes at a right angle to the veins, glabrous but for a few shattered hairs; the underside is much lighter, glaucous, and hairy on the veins.

The inflorescences are formed at the top of the plant. They have long peduncles and 2-3 dichasial branchings. At each branching and under each female flower there are two large broad bracts which turn white before shriveling. A most peculiar characteristic is that the basal bracts of the inflorescence are fused over their whole

length, forming a cup enveloping the first two branches and the first male flower in between. The flowers are pure white, up to 5 cm (2 in.) across, the male with 4, the female with 5 tepals. The fruits are up to 25 mm long with 3 wings which are 3-10 mm wide at the top of the fruit and taper off towards its base.

If one compares this description with that of Brandegee, there is one striking difference—the color of the flowers. Brandegee writes: "flowers pink or purple" but in our seedlings they are always pure white. It is also amazing that Brandegee, although he describes the bracts of the inflorescence, does not say that the basal ones are fused. There are a few minor discrepancies, but this is only to be expected as wild species are usually variable, sometimes strikingly so.

On the whole, there is a good agreement and there can be no doubt about the identity of our species. Its name,

however, is another matter.

Browsing through begonia literature in search of a quite different plant, my eye fell on a drawing of B. boissierii in a paper by L. B. Smith and Bernice Schubert from 1950. There I suddenly saw the same fused bracts as in B. californica. I immediately looked up Alphonse de Candolle's description, and it fitted B. californica like a glove. His material consisted of a herbarium specimen of Pavon, but probably collected by Sessé and Mociño in Mexico and present in the Boissier Herbarium at Geneva (hence the epithet boissierii). There is no mention of the flower color, nor of the fused bracts.

It is not known where this specimen was found, but, according to Smith and Schubert, the species has since been collected in the state of Guerrero, 25 miles south of Chilpancingo and in the neighborhood of Taxco. This is 800-850 miles (as the crow flies) from Baja California, a striking disjunction, although I doubt that the country between the known localities has been explored so intensively that one can be certain that the species does not occur there.

A second Mexican species to be considered in this context is *Begonia abaculoides*. This was described by Arthur Houghton in his thesis of 1923, but remained a manuscript name until Rudolf Ziesenhenne published it according to the rules, with a diagnosis in Latin and pictures, in *The Begonian* of December 1968. Description and

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pictures fit the two previous species rather well. *B. abaculoides* is described as annual, but as Houghton states "roots not seen," it could just as well be tuberous. The leaves are said to be ciliate, which is not how I would describe those of *B. californica* and *B. boissierii* (although the teeth are tipped by a hair) and there is no mention of a ring of bristles at the top of the petiole.

The most glaring inconsistency, however, is that *B. abaculoides* has 4 rather than 5 tepals in the female flower. For this reason, Houghton erected a new section for it, Quadriperigonia, also published by Ziesenhenne. Judging by his picture, however, the material is in a poor state, and I wonder if one can really be sure about the number of female petals. Apart from this, the species is a typical representative of the section Knesebeckia.

For me, the main reason to identify B. abaculoides with B. boissierii is that, judging by Ziesenhenne's picture, the basal bracts of the inflorescence are fused. They are described as sheathlike (vaginibus). Houghton also says "The female flower during its development is entirely enfolded in an elongated conduplicate involucre formed of two glabrous bracteoles." The photo graph of a young female flower of B. californica I think shows exactly what this rather complicated sentence is meant to convey. B. abaculoides was found near Cuernavaca, which is only 30 miles north of Taxco.

Overlooking these data, I venture to suggest that *B. californica* and *B. boissierii* are the same species (which should be called *B. boissierii* A.DC. as this is the oldest name) in which, I suspect, *B. abaculoides* also has to be included.

First-time hybridizing-easy and fun

Kingsley Langenberg

Recently I tried hybridizing begonias for the first time. The results are not all in yet, but the experience has been so interesting and rewarding so far that I want to urge other novices such as myself to give it a try.

I had presumed that the process would be difficult and uncertain. However, since my first try was both easily done and successful, I am either very lucky or it is not hard at all.

It all started in fall of 1979 when I noticed dried seed pods on several varieties of semperflowens-type species that I had grown outdoors. Curious, I picked some pods, broke them open, and found them to contain dry seeds. So I harvested various kinds of seeds and placed them in individually labeled envelopes.

Later, I looked at some of the seeds under a 15-power microscope and saw that there were two kinds of seeds—plump, rounded ones, and thin, shriveled ones. The plump ones were the good ones.

I had read that these could be separated from other seeds by pouring the mixture back and forth from one piece of folded, rough paper to another. The plump seeds would roll down to the crease and off to the other piece of paper while the shriveled seeds tended to stick to the paper and could be discarded after each transfer. It worked like a charm.

Next, I planted some of my harvested seeds. They grew!

That's where I was last spring. One day I decided to take matters into my

Kingsley Langenberg of the Greater Chicago Branch lives at 3437 Cheyenne Rd., Waukegan, IL 60085.



Author pollinates *B. cucullata* by brushing male flower against female

own hands. So I picked a male flower from a dark, star-leaved rhizomatous variety that I had grown from an ABS seed mixture called *B*. Australia and pollinated a female flower of *B*. bowerae var. major that happened to be nearby.

My choice of parents was not completely unpremeditated: I had read that at least one of the parents should be a species to help ensure that the seeds would be good (viable), and I thought it would be interesting to see what would result from a cross of a solid black leaf with a patterned leaf.

I watched the female flower for the next few weeks. I thrilled when the petals dropped but not the winged pod (ovary). The pod swelled noticeably. Patiently I waited, fully expect-

ing all the while that the pod would drop before the seeds had ripened.

Finally one day I saw that the stem holding the pod had shriveled. Anxiously I waited some more. By the next day, the pad had turned in color from greenish to brownish and had shriveled, too. I knew from my experience last fall that it was harvest time.

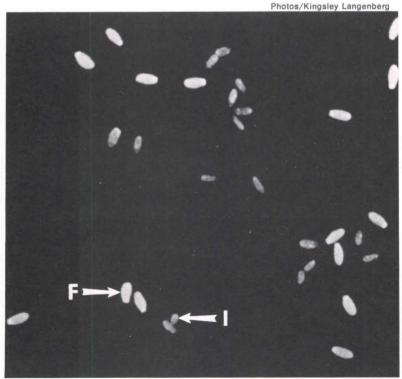
The seeds looked good so I planted them. Only four days later they sprouted like crazy—wow, was that exciting!

Since then I fussed over the seedlings like they were children. Naturally, I think they are all great. I ended up with about a hundred little seedlings that started to show their individualities when each had only three leaves.

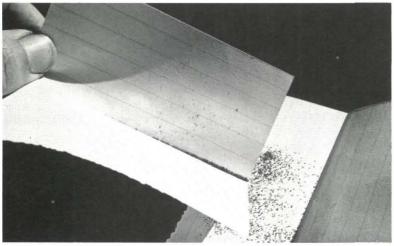
In sum, hybridizing is fun. Try it.



Ripe seed pod, broken open, spills seeds. Light-colored plump ones are good.



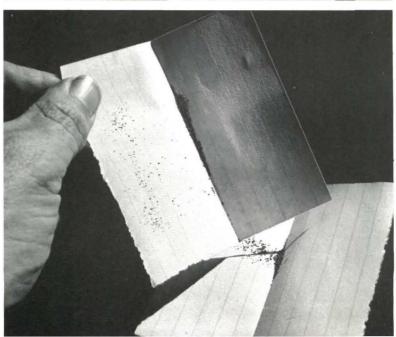
Microscopic view shows fertile seeds (F) next to small, dark, infertile ones (I)



To winnow begonia seeds, pour onto one half of creased paper . . .



Tilt paper slightly so rounder seeds roll into crease, leaving chaff and infertile seeds behind . . .



Repeat first 2 steps as necessary

Creeping species from Brazil now B. thelmae

Lyman B. Smith and Dieter C. Wasshausen

Thelma O'Reilly has sent us excellent material of a small, delicate begonia that has been a vexing problem for some years so we take pleasure in dedicating this unusual species to her.

We understand that it came from the gardens of Roberto Burle Marx in Rio de Janeiro and thus is almost certainly Brazilian. However, there is no exact record of its origin and its combination of characters is so unusual that it has been easy to distinguish it from all others in the key that we are preparing for all natural species. In fact, it does not fit any section exactly and only by an extension of the already generous limits of section Begonia (Begoniastrus of A. DeCandolle) are we able to place it with any conviction.

Description

Plant herbaceous, perennial, probably a creeping or hanging epiphyte; stem flexuous, ca. 1 mm thick, sparsely pilose with red-brown hairs; leaves in 2 rows; stipules erect, at first overlapping, ca. 15 mm long, ovate, broadly acute or rounded, deeply and laterally cordate with overlapping lobes and thus appearing peltate, sinuate-ciliate, strongly and richly nerved, transparent, tinged with brown; petioles slender, to 15 mm long, sparsely pilose; blades straight with the midnerve continuing the direction of the petiole, spreading, to 50 mm long and 25 mm wide, elliptic to oblong, broadly sub-

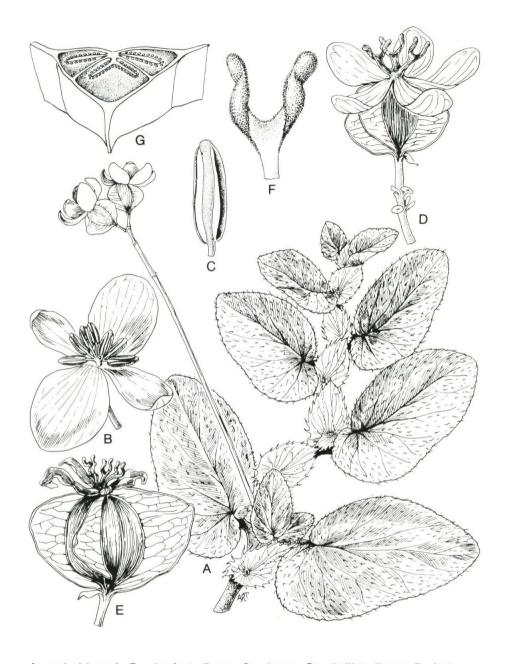
Dr. Lyman Smith is botanist emeritus and Dr. Dieter Wasshausen chairman of botany at the Smithsonian Institution, Washington, DC 20560.

acute or rounded, strongly asymmetric at base with the lower lobe semior-bicular and making the blade laterally emarginate or cordate, subregularly crenate, sparsely pubescent on both sides, paler along the principal nerves; peduncles axillary, to 8 cm long, extremely slender, very sparsely pilose, bearing a few minute, deciduous bracts on swollen persistent bases; inflorescences one-few-flowered, racemose,

The plant's history, page 116 How to grow it, page 117

glabrous; bracts ovate, transparent, minute, deciduous; staminate pedicels to 7 mm long; tepals 4, white, the outer elliptic, 9 mm long, the inner spatulate, 7 mm long; stamens few, on a short column; anthers 2.5 mm long, oblong with a slightly produced connective; pistillate pedicels 3-5 mm long; bracteoles single, like the bracts; tepals 5, white, nearly uniform, spatulate, obtuse, 6 mm long; styles shortbifid, the stigmatic tissue linear, spiral, continuous; ovary 3-celled, broadly elliptic, plano-convex, the 12 placentae on the flat side simple, that on the convex side bilamellate; capsule subequally 3-winged, the wings broadly subovate.

BEGONIA (section BEGONIA) THEL-MAE L. B. Smith & D. C. Wasshausen, spec. nov. Herbacea perennis, versimiliter epiphyta repens vel pendens; caulis flexuosus; folia disticha, stipulis erectis initio imbricatis, ovatis, petiolis gracilibus, lamina recta, patens, valde asymmetrica ad basim lateraliter emarginata vel cordata; pedunculis axillaribus, gracilibus, bracteis minutis, persistentibus; inflorescentia recemosa, floribus singulis vel paucis; bracteis deciduis, ovatis, minutis; pedicellis, masculinis ad 7 mm. longis; tepalis masculinis 4, exterioribus ellipticis, interioribus spathulatis; staminibus paucis, brac-



A—end of branch. B—staminate flower. C—stamen. D—pistillate flower. E—fruit. F—style. G—section of ovary.

teolis singularibus, bracteis similibus, tepalis femineis 5, albis, subequalibus; stylis brevibus bifidis; ovario 3-loculato, elliptico, placentis 2 simplicibus et una bilamellata; capsula subaequaliter trialata, alis late subovatis.

Type: Brazil: Cultivated, 1981, Thelma O'Reilly s. n. (U.S.).

B. thelmae: where it's from, how it got here

Carrie Karegeannes and Thelma O'Reilly

In September 1976 several ABS members attending the Eastern Regional ABS Convention in Pittsburgh visited the banana jungle of Dr. Gilbert S. Daniels' greenhouse. Among tropical plants on floors and benches below the banana trees were several begonias, including two small, unnamed species from Brazil.

Both caught our eyes as beautiful and unusual, but one especially charmed us—a dainty creeper growing flat along the bench with ends trailing over, its small, velvety, bronzy-green, overlapping leaves distinctively marked by pale areas along the veins.

Tiny white flowers—one, two, or perhaps three to a stalk—were held straight up above the velvety mat of leaves on erect, slender peduncles, in a manner we had not seen on a begonia before. Persistent stipules longer than the internodes enfolded the stem on new growth, drying and turning back on older stems.

Dr. Daniels—then director and now principal research scientist of the Hunt Botanical Institute and president of the American Horticultural Society—thrilled us by giving each of us clusters of plantlets growing from the base of leaves of both species, which he had put down earlier in a light propagating mix.

He had brought both plants from the gardens of landscape architect Roberto Burle Marx in Brazil in January 1974. They had been collected in

Carrie Karegeannes, ABS co-director of nomenclature, lives at 3916 Lake Blvd., Annandale, VA 22003. Thelma O'Reilly, also co-director of nomenclature, lives at 10942 Sunray Pl., La Mesa, CA 92041. the wild in Brazil, but he had not been given the name of the collector or any identifying number or locality information.

For record-keeping purposes, Jack Golding numbered his plants GD #1 (the first of several aliases for the creeping one) and GD #2, using Gil Daniels initials. Carrie Karegeannes used these numbers, and both shared with New York and Virginia branch members, as the plants thrived, first in a breadbox and then in an old fish tank under fluorescent lights for Carrie and creeping over lava rock under lights for Jack.

Meanwhile, others of the group—Evelyn Cronin and Corliss Engle of the Buxton Branch among them—carried plants back to their home states. Dr. Daniels had shared with still others, including Rudolf Ziesenhenne in 1975. Eventually the creeper with neat little over leaves so strikingly marked (when grown in strong enough light) was offered in greenhouse catalogs. It became known as unidentified Brazil #9 (mk), or MK #9, for dealer Michael Kartuz; or #10 in Millie Thompson's catalog.

ABS' Clayton M. Kelly Seed Fund offered it in the October 1976 Begonian, with a photo on p. 273 and description on p. 274, the seed coming from Prof. J. Doorenbos of Agricultural University, Wageningen, The Netherlands. Prof. Doorenbos thought it probably a new species and recommended that it be allowed to creep freely over the ground rather than being planted in a pot.

With the inauguration of the ABS uniform numbering system for unidentified species last year, this Brazil species was given the official number of

The trick to growing B. thelmae successfully

Thelma O'Reilly

In the introduction to the description of *Begonia thelmae*, Dr. Smith mentions the unusual characters of this begonia. It is understandable that its cultural requirements are also different from other begonias grown in most collections.

This lovely creeper will reward you with astonishing, luxuriant growth if you provide the conditions it requires. Otherwise, the rewards are short-lived —as many growers have discovered.

Mabel Corwin of Vista, Calif., an extraordinary begonia grower, discovered how to grow *B. thelmae* to perfection. Conventioneers who had the opportunity to visit her outstanding begonia collection last fall are still talking about the amazing specimen that greeted them in her glasshouse. Horizontally, *B. thelmae* covered a space of eight feet under the bench. Vertically, it spread over the headerboard, and crept across the concrete path, finally climbing the rear glasshouse door.

This beautiful carpet of small, lush, green leaves was highlighted everywhere with rather large white flowers (large for size of leaves) held aloft on slender white peduncles. It was started with 2 cuttings in a shallow, 14-inch redwood container sitting on gravel under the bench.

To recreate this situation in your collection, Mabel shares the following advice: "B. thelmae seems to require a short rest. After blooming in fall and early winter, active growth slows down and it tends to lose leaves, first at the base, then continuing along the stems. The time to remove cuttings is immediately before this period of dormancy starts.

"Place several tip cuttings in a shallow container of soil mix, put under the bench or in low light (which is necessary for best foliage color and texture), and provide plenty of moisture and humidity. It does not require a lot of fertilizer. To keep a beautiful, healthy specimen of this unusual begonia, it must be restarted from strong tip cuttings each year."

Many have bemoaned the loss of this begonia when grown in pots and hanging containers. It flourishes for a while but the healthiest plant soon starts to lose its leaves from the base and eventually straggling stems with a few tip leaves are all that remain.

The stems seem to require support for the fine roots that spring from the nodes. With a few cuttings, low light, high humidity and room to creep (a terrarium is suitable for indoor gardeners), you can create your own magic carpet with no limit on size.

U009 (see February 1981 *Begonian*, p. 36) until it could be identified or named.*

Now, in this issue, Dr. Smith and

Dr. Wasshausen of the Smithsonian Institution publish the new species with its new name, *Begonia thelmae*.

^{*}The second species Gil Daniels brought in, which Jack numbered GD #2, was given

the ABS number U003. See February 1981 Begonian, cover and p. 35 and December 1979, p. 303.

ROUND ROBINS/Lots of seed-growing tips

Mary Harbaugh

Seed growing is a popular topic in the robins and many comments have centered on methods of germination and transplanting techniques. Before planting, Kit Jeans from Tennessee examines the seed on white paper and carefully scans it with a 20-power lens. If more than half is shriveled or drylooking, she trashes it. She is looking for nice, fat seed to produce a successful crop.

Mabel Corwin, California, advises that when trying to take just a pinch of seed from a packet, the easiest way is with the point of a nail file or paring knife.

Many ways to germinate

There are many methods of germination which growers have found successful. Most advise that if you have found a reliable method you should stick with it, but if you are still searching perhaps one of these will help. One of the novel methods is used by Don and Chris Lill of Australia. They germinate seeds in plastic dishes which they float in tropical aquariums under grow lights.

Barbara Grill of Florida adds that if one were still having difficulty with this method, check the temperature of the water in the tank to make sure that it is warm enough.

The pressure cooker

Instead of putting seed in individual containers, Kit Jeans fills a plastic shoe box to a depth of $1\frac{1}{2}$ to 2 inches with vermiculite sterilized in her pressure

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

cooker. She then puts her starting mix into a strainer and forces it through onto the vermiculite. This is followed by fresh vermiculite forced through the strainer to cover the mix.

The mix acts as a wick, bringing moisture through from the bottom of the box. Putting it on fine vermiculite keeps it from falling through and down too deep. She then marks off 3-inch plots, labels them and very carefully spreads the seed. The shoebox is covered and goes on a light shelf over another light.

Seeding directly into flats

Since he has so many seeds this year, Paul Lowe of Florida has decided to try seeding right into flats instead of planting in the plastic shoeboxes that he usually uses. He figures that even if he loses several seedlings due to weather, the ones left will be the hardiest and will survive.

He doesn't have to do much thinning this way and the seedlings will mature right in the flats. This saves a lot of bench room since he doesn't have to pot up the seedlings. He doesn't advise this method if you only have a few seeds.

Group transplantation

Elda Haring of North Carolina grows her seedlings to good size before transplanting and does not put them directly into pots. The 1½-inch pots are small and the plants tend to dry out too quickly in her environment.

Instead, when the seedlings are about a half-inch tall, she transplants them as a group to other containers, spacing them about 2 inches apart. When the leaves of these transplants begin to touch she then puts them into 2- or 3-inch pots.

Storage temperatures

Ben Yarbrough, Georgia, brings us the following information from Jules Janick of Purdue University. Janick says the best temperatures for storing many seeds have been shown to be in the range of 0 to 32 degrees F.

The actual storage conditions required for seed depend ultimately on the species and the length of storage desired. For most seeds, temperatures of 32 to 50 degrees F. and a relative humidity of 50 to 65 percent are adequate to maintain full viability for at least one year.

Glenn Maynard of California has found that storing seed in a tight jar and keeping it in the refrigerator (not the freezer) seems to aid seed germination. He found some in his refrigerator that was 3 years old and had excellent germination.

He has also found that he needs to fertilize his seedlings early with a weak solution. If he forgets, they take on a chlorotic look and don't grow much until he does.

Use an old pen

As a helpful hint, Ruby Tetrault of Illinois likes to use an old-fashioned straight pen to lift the seedlings from the mix. She spreads the point apart a little to go on either side of the stem.

Clay vs. plastic pots

The discussion of the relative merits and drawbacks of clay vs. plastic pots has been going on ever since plastic ones came into use. This controversy is reflected in the varying opinions of robin members. Ann Bello of New Jersey has found that rexes grown in clay pots do the very best. "In plastic they get limp and in clay pots they stay turgid. I will never grow rexes in plastic pots again."

In contrast, Dora Lee Dorsey, Florida, is going back to plastic pots for her rexes. "I feel they go dormant too badly in the clay pots because of their getting colder in the winter. Those I had in plastic hanging pots last season kept growing but all those I had put into clay suffered from chill and were dormant into late spring. They did not get good growth on them before the heat was on, so their summer growth was poor, also."

Some have found ways to adapt to plastic pot culture. Cynthia Smith of California drills holes in the sides of her plastic pots and finds that the additional availability of oxygen helps.

Mabel Corwin grows most of her plants in plastic but has her rhizomatous in very shallow clay pots. "Years ago when everyone was changing to plastic pots I held out for a long time. I just didn't like plastic. Finally, I learned to grow in plastic by changing my mix. You must use a very loose mix that drains well."

New flight topics

I have received some suggestions from participants for new flight topics. They include flights on shrub-like begonias and cacti and succulents. One member noted that there are flights on gesneriads, ferns, and orchids and she feels that cacti and succulents share a number of cultural factors with begonias such as cool growing conditions and the ability to thrive in a variety of different light situations.

Another suggestion was for a flight for small commercial growers of begonias. It could cover such issues as which plants are propagated most readily, which seem to sell best, the importance of proper labeling on plants to sell, and advertising techniques. If you are interested in these or any other flights, please contact me.

QUESTION BOX/ Clearing up fertilizer confusion

Elda Haring

Question: I am confused about how to fertilize my begonias. I was using fertilizers like Rapid Gro and Miracle Gro, but some say to fertilize each time you water and others say only once a month.

Answer: Constant feeding is usually recommended for those plants growing in soilless mixes. It must be a very dilute solution to prevent fertilizer burn.

When we lived in Connecticut I fertilized all my begonias twice a month all year with half-strength Rapid Gro, alternating with Miracle Gro or Plant Marvel. I did not use a soilless mix but one containing some topsoil, peat and builder's sand with added lime and bonemeal.

I do not like the constant-feed method for my plants although many growers find it satisfactory. When using this method you must flush the pot with clear water every 4 or 5 weeks to prevent a buildup of fertilizer salts.

Question: My *B*. 'Fuscomaculata' set flower buds but they dropped before opening. What would cause this?

Answer: Quite likely the humidity is a little low. Try frequent misting or washing the plant off with cool water once a week.

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

Seeds of rare and exotic plants, indoor and outdoor, vegetables and herbs, from collectors worldwide. Yearly subscription to seed lists and newsletters USA \$5.00; foreign \$6.00 U.S. funds. RARE SEEDS, P.O. Box 616B, Silverton, OR 97381

Question: I am sending you a color picture cut from a house plant catalog labeled simply "Begonia." It looks a little like a cane. It grows beautifully, then blooms and dies. This has happened twice to plants I have purchased. It is so beautiful I hope you can identify it and tell me what I am doing wrong.

Answer: The begonia pictured is *B. grandis* ssp. *evansiana*. It is a semi-ruberous begonia. After it blooms, it sets tiny bulbils in the axils on the stem which finally drop from the plant.

Then leaves and steps drop off—it goes dormant.

Put the pot in a semi-lighted place when this happens and let it remain dry during winter. In March start to give it a little water for it soon will be putting up new shoots.

This is our only "hardy" begonia. If planted outdoors in a protected spot in soft soil and mulched well, it will live over the winter as far north as southern New York.

Depending on where you live, it will start into growth sometime from mid-April to late May. I like to take leaf, stem, or wedge cuttings during the growing season, which usually will grow and bloom in my windows in winter.

In my greenhouse, bulbils drop on benches and in pots of other plants and start to grow in spring when they can be transplanted. This plant is also grown easily from seed.

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NEW CULTIVARS/ Official international registrations

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

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

Begonia 'Joyce Allison'

No. 817—Begonia 'Zulu' x 'Elizabeth Lockhart' 'Joyce Allison'

Cane-like, Superba type, with vigorous 4' stems. Leaves, 10" long, are glabrous and shiny deep green with faint white splashes between the 5 green veins above, the veins faintly red underneath; the wavy red margin is three-lobed on one side and one-lobed on the other. Petioles are green; stipules slightly red. Slightly salmon pink

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.

flowers, 13/4" across, hang in full showy trusses on reddish, 2"-3" peduncles nearly all year, but more abundantly in summer. Male flowers are 2-tepaled; females 5 with 2 tepals wider than the other 3. The seed parent is not the Tuberhybrida cultivar named B. 'Zulu', but is shrub-like. Originated in 1974 by Hazel Burley, 191 Simpson Road, Bardon, Brisbane 4065, Australia; first bloomed in 1975; first distributed in 1976. Tested by Bernard Yorke of Brisbane and Mickey Meyer of Lathra, Australia. Registered March 27, 1980.

Begonia 'Ripples'

No. 818—*Begonia* 'Broken Hill' x 'Universe' 'Ripples'

Rhizomatous. The 5½" x 4" leaves—yellowish green with chocolate spider-web markings running across even the veins above and below—cup upward and are deeply 7-lobed with the lobes acuminate and the coarsely serrate to cusped, slightly wavy margin curling upward. The

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7 palmate veins are prominent below. Petioles are pale red and slightly hairy; stipules pale green. Flowers are pink in cymes held on erect 8" peduncles in summer (in Australia); capsules are 3-winged. Originated in 1977 by Hazel Burley (address above); first bloomed in 1979; first distributed in 1978. Tested by Bernard Yorke and Mickey Meyer (as above). Registered March 27, 1980.

Begonia 'Silver Pebbles'

No. 819—Begonia imperialis x 'Pink Pearl' 'Silver Pebbles'

Rhizomatous with distinctive foliage. Somewhat large, 83/4" x 71/2", shallowly 7-lobed "star" leaves are silvery pustulate on clear green and very slightly puckered along some of the 9 veins, which are green and deeply indented above, flushed red beneath; the margin is narrowly green-banded and red-serrulate. Young leaves show a fine hair in each pore. Petioles are red-hairy; stipules green flecked with red. Pale pink flowers are like those of B. imperialis in form, as are the capsules, and are borne on erect 7" peduncles in summer (in Australia). Male flowers are reported infertile, the buds either falling or maturing without stamens. Originated in 1974 by Hazel Burley (address above); first bloomed in 1975; first distributed in 1976. Tested by Bernard Yorke and Mickey Meyer (as above). Registered March 27, 1980.

Begonia (Excalibur grex) 'Bloodstone' No. 820-Begonia 'Black Queen' x hatacoa 'Silver' (Excalibur g.)

'Bloodstone'

Rex Cultorum group; rhizomatous, with erect, branching rhizome. Burgundy, 3" x 1½" ovate leaves have a glabrous surface with ciliate margin and 6 veins. Petioles are hairy and red; stipules chartaceous, red. Pink flowers, borne in cymes on 8" to 12" peduncles, are of typical B. rex form and 1"-11/2" in diameter, with 4 male and 5 female tepals, blooming almost continually. The thin, shiny, deepred leaves—even deeper on new growth are carried on a small, compact plant. Originated in 1977 by Kit Jeans, Route 1, New Johnsonville, TN 37134; first bloomed in 1978; first distributed in 1980. Please turn to page 123

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by Mildred L. and Edward J. Thompson

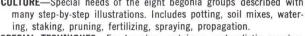
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The Begonian

SEED FUND/Interesting species including B. boissierii

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According to many reports, our new padded mailing packs have resulted in better germination rates and are worth the added cost. If you want to take the

chance that your seed will be crushed, you may still send a self-addressed envelope, but I can no longer provide protective padding for 18 cents postage.

- MY 1 B. xanthina: Himalaya, 1852. Rhizomatous with large, distinctive leaves; roundly-ovate with red raised veins near sinus and raised silver blotches between veins. Dark green above, red below. Yellow flowers. Needs humidity of 60 percent or more. Supply limited. per pkt 1.00
- MY 2 B. hypolipara: Rhizomatous with large roundly ovate green leaves and fairly large white flowers in winter.....per pkt 1.00
- MY 3 B. annobenensis: Cameroon. Purely of botanical interest—no beauty! De-Candolle erected a special section for it: Sexalaria (no romantic undertones—it just means that the fruit has six wings)........... per pkt 1.00
- MY 4 B. ampla: Magnificent climber from tropical Africa with large broadly oval leaves, white flowers (2 inches across) and fleshy fruits the size of an egg, pale yellow. Fresh seed, but only 10-12 per order..... per pkt 1.00
- MY 5 B. carrieae: Rhizomatous with large, lobed, rugose green leaves and large white flower. Profuse white hairs decorate leaf stems and both sides of leaves. See picture and description by Rudolf Ziesenhenne in The Begonian, May 1976. This distinctive plant was named for Carrie Karegeannes, ABS co-director of nomenclature.....per pkt 1.00
- MY 6 B. boissierii (syn. californica): Tuberous with white flowers. This seed is from plants grown from seed collected by Scott Hoover in Baja California. See page 108 and *The Begonian*, October 1978......per pkt 1.00
- MY 7 B. gehrtii: Rhizomatous with large, rugose, shiny green leaves and white flowers in fall and winter. Grows best in cool temperatures. This was offered last October but supply was small. If you bought and did not get germination, please say so and I will replace free. This is a new supply of fresh seed with good germination rate.....per pkt 1.00

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

More new cultivars From page 122

Tested by Thelma O'Reilly, 10942 Sunray Place, La Mesa, CA 92401. Registered April 1, 1980.

Begonia 'Herselph'

No. 821—Begonia 'Cowboy Jeans' x unnamed seedling 'Herselph'

Rhizomatous. Apple-green, 3" x 5", lobed leaves have somewhat crispate-ciliate margins, glabrous surface, and 5

to 6 veins. Petioles are hairy and redspeckled; stipules chartaceous. Pink to white flowers, borne in cymes on 7" to 10" peduncles in midwinter, are about 1" across, with 2 male and 2 female tepals. The very concave leaf and fluted edges give this cultivar a distinct appearance. The pollen parent originated in cultivation in Australia. B. 'Herselph' was originated in 1977 by Kit Jeans (address above); first bloomed in 1978; first distributed in 1979. Registered April 1, 1980.

Time to nominate unsung members, plants

Kit Jeans

Sometimes it seems ABS conventions are just like Christmas. No sooner do you get past one, there's the next one breathing down your neck. Like Christmas, each convention makes at least three people very happy.

Those of us who saw Thelma O'Reilly at the 1980 convention when she realized she'd just been named to receive the Eva Kenworthy Gray award have no doubt it was Christmas morning for Thelma.

Rudy Ziesenhenne, who got the Herbert P. Dyckman service award, had a lump in his throat as well. And B. 'Murray Morrison', sitting in a huge tub behind the podium as the winner of the Alfred D. Robinson medal, could have been used for a Christmas tree. It didn't need any ornaments, either.

All this festivity springs directly from the membership of the society. Nominating members for the ABS' most coveted awards is your opportunity to play Santa. Officers do not select the nominees for

these kudos; you do.

All it takes is a little thought, some stationery and a postage stamp. Surely you know someone who is deserving. There are a lot of people who do a lot of work for the society, unsung heroes all. If the awards committee doesn't know about them, they remain unsung. And that's a shame. Our society brings a lot of pleasure to a lot of people. Those who make such joy possible deserve to be recognized.

The Eva Kenworthy Gray award is given to an individual who has done a lot in the way of literary efforts for the society. How about the editor of your branch newsletter? Who's your publicity chairman? Do you have members who work hard to promote begonias and their culture in your local newspaper? Have you robin friends who make a great effort to bring new growers into the fold? "Literary efforts" doesn't necessarily mean professional writers. Punctuation is not

Send nominations to awards committee chairman Kit Jeans, Rt. 1, New Johnsonville,

TN 37134.

as important as praise.

The Herbert P. Dyckman service award is given for just that-service to the society. Who's the hard-working person who always puts your branch show together? Who looks after your branch library? Who can always be counted on to start and grow plants for your sales? Service is helping out. I remember a gentleman at last year's convention who got commandeered into handling rare plants for the show's sale. As a result, he heard few lectures and missed out on most of the fun. He knew what responsibility was. And we appreciated it.

Everyone has his favorite begonia. Surely you'd like to see it recognized and honored. The only requirement for the Robinson medal is that the hybrid must have been in cultivation for five years or more. If you're not sure about that, don't worry about it. Worrying about that is

Think about it. Then sit down and write me a letter listing your nominees, giving a little background, and saying why you think they deserve the awards. This is what the society is all about.

You thought it was all about begonias, didn't you? True—but who grows those begonias?

Trophy donations sought

Convention Trophy Chairman Pat Maley is seeking donations to finance purchase of show trophies for the 1981 ABS convention, "A Begonia Holiday," in Ventura, Calif., Aug. 14-16.

Trophies will be engraved "1981 American Begonia Society Show" and a donor can add the name of a person or ABS branch if the donation covers the cost of

the trophy plus engraving.

Each division trophy is expected to cost between \$25 and \$50. Assignment of trophies to divisions will be made as received. Donations of smaller amounts also are needed.

Donations may be sent to Pat at 1471 E. Madison Ave., El Cajon, CA 92021. Make checks payable to "1981 ABS Show Fund."

ABS NEWS/One big step toward financial security

ABS directors on March 18 took a major step toward the society's financial security when they changed investment and budget-writing policy, moved to establish an endowment and expand the ABS Bookstore, and establish a larger role for branch national directors.

These actions were requested by President-Elect Chuck Anderson to carry out recommendations of the Special Task Force on Long-Range Financial Planning, of which he was chairman. The task force's report was presented that night to the board, which accepted it and disbanded the task force at its request.

By unanimous vote, the board:

- ☐ Authorized the treasurer to invest the society's funds for maximum return consistent with preservation of capital. Investments will be made after consultation with society officers and reported as soon as possible to the board.
- ☐ Directed the president to establish an ABS Endowment for receipt of con-

tributions, bequests, and other gifts, the principal to be invested to generate operating funds.

☐ Directed the finance committee to use certain specific procedures when drafting the annual ABS budget to ensure thoroughness and accuracy.

☐ Requested all officers and directors to try harder to deliver "timely, efficient service to members."

☐ Directed all officers and directors to "make greater use of branch national directors to communicate with members."

The board, by a 15-4 vote, decided to express dues as having two parts, for example: Dues are \$10, of which \$9.50 goes for a subscription to *The Begonian*. When a dues change ever is discussed, this expression will help members understand whether *Begonian* costs—the bulk of the society's expenses—have changed or whether other services' costs have

Please turn to page 126

ABS BOOKSTORE OFFERS 5 GOOD BEGONIA BOOKS

Begonias The 1938 classic, Les Begonias, by Charles Chevalier translated from the French by Alva Graham. \$5.

Begonias for Beginners Elda Haring's primer crammed with useful information. \$5.75 hardcover. \$3.75 paperback.

Begonia Isamu Misono's Japanese text with 302 color plates of begonias identified in English. \$30.

Begonias English translation of

the Misono text (above) by Marguerite De Cola and Hikoichi Arakawa. Includes no photos. \$5.50 (text plus translation \$34).

Begonias The new Japanese-published book with 431 superb color photos; captions and index in English. \$18.

Curtis Botanical Magazine reprints
Set of 8 antique color plates of
begonias reproduced from the
journal. \$6.

California residents add 6% sales tax. Foreign orders must be payable in U.S. currency. Make draft, check or money order payable to American Begonia Society. Send to ABS Bookstore, c/o Gil Estrada, 7914 Springer St., Downey, CA 90242.

THE BOARD/ ABS directors March 16, 1981

Treasurer John Ingles reported balance on hand Feb. 1 of \$3,963.60, income of \$3,377.43, and disbursements of \$2,560.73, leaving a balance on hand Feb. 28

of 4,780.30.

President Gil Estrada announced that Research Director Corliss Engle had submitted a letter of resignation. Later, under new business, the resignation was accepted with regret by the board. Anthony P. Croce of Newton, Mass., was nominated by the president for appointment as successor and the board ratified the appointment.

Gil reported receiving a letter from the U.S. Internal Revenue Service closing its examination of ABS financial records for 1978. The IRS found no reason to change the society's tax-exempt status but determined that income from Begonian advertising con-stitutes "unrelated income," so any such income exceeding \$1,000 annually shall be taxable. Gil turned over to the treasurer documents and forms received from the IRS for a possible future report.

Historian Frances Estrada asks that branches send newsletters, items and photos for inclusion in the

ABS scrapbook.

Barbara Schneider, chairman of the 1981 convention and show, reported. There will be a boutique where members may sell begonia-related items. The show committee will meet May 18 at 5 p.m., preceding the board meeting, at Fullerton Savings in Anaheim. Barbara said a theme has been chosen: "A Begonia Holiday."

Begonia Holiday."
Gil reported that the audit committee has examined 1980 convention and show records and chairman Chuck Richardson had told Gil they were in order. Chuck Anderson reported on progress in planning the 1982 convention and show. He moved appointment of Mary Margaret Rafferty of the Santa Clara Valley Branch as chairman, and the board approved. Chuck said the Holiday Inn in Santa Cruz, Calif., has been reserved as convention headquarters. been reserved as convention headquarters.

Chuck reported that the publications committee, in a meeting earlier in the day, moved to recommend three policies for board approval. After discussion, the board adopted these policies:

Policy on open board meetings

Because an informed member is better able to contribute to an organization, the Board of Directors encourages ABS members to attend board meetings to observe the workings of the society's governing body. Any meeting of the board is open to any member of the society, except for an executive session duly called to discuss personnel matters only. the policy of the society that all actions by the board and statements made at board meetings are on the record and therefore subject to being reported in the publications of the society. The editor of the society shall not be constrained by any officer or director snail not be constrained by any officer or director from reporting such actions and statements in a fair and accurate manner. Minutes of board meetings or portions of them are subject likewise to being reported in the publications of the society. The editor shall edit or condense the minutes as appropriate for publication

Policy on handling complaints about publications

It is the policy of the society to encourage early More ABS news

From page 125 changed.

New publications policies

Three new policies which specify the etxent of the ABS editor's authority, recommended by the publications committee, were adopted by ABS directors March

The policies, adopted unanimously, permit unrestricted reporting of ABS board meetings, direct that complaints about publications be relayed to the editor for

resolution of camplaints and concerns about ABS publications in order that they not fester and swell beyond their logical importance. To that end, any officer or director who receives any such complaint or expression of concern shall relay it to the editor by mail or telephone as soon as possible. The editor shall make all appropriate efforts to satisfy the member making the complaint or voicing the concern. No officer or director shall take any action concerning such complaint or concern without this procedure first having been allowed to run its course.

Policy on accountability of the editor
The editor of the ABS is accountable to the Board of Directors and its Publications Committee.

Chuck delivered the report of the Special Task Force on Long-Range Financial Planning, of which he is chairman. The report was accepted by the board, and the following motions were offered by Chuck and passed by the board:

1. To authorize the treasurer, after obtaining the routine second signature, to invest funds in a manner consistent with recommendations of the Task Force.

2. To direct the president to take immediate steps to establish an ABS Endowment as outlined in the

Task Force report.
3. To direct the bookstore manager to explore ways to offer a wider variety of books.
4. To direct the finance committee to write the an-

nual ABS budget in a manner consistent with recom-

mendations of the task force. 5. To request committee chairmen and department

heads to redouble efforts to offer timely, efficient service to members.

6. To direct all officers to make greater use of

branch national directors to communicate with mem-7. To express dues as having two parts: the Begonian subscription fee and a portion for other services. For example "Annual dues are \$10, of which \$9.50 goes for a subscription to The Begonian."

8. To disband the Task Force.

Directors were notified to submit all bills and financial spaces for fieed 1990.81 to the transverse for fieed 1990.81 to the transverse before

cial reports for fiscal 1990-81 to the treasurer before July 31, end of the fiscal year. All reports to be presented at the annual meeting Aug. 15 should be received by the president and the secretary before the meeting.

Gil said he seeks to name a bookstore manager so he can be relieved of the burden. He asked that directors notify him if any turns up a member willing

to run the bookstore.
Gil reported that the Southwest Region has offered to contribute \$100 toward the cost of having the president attend the Southwest Get-Together in May, Gil asked if he board wished to authorize any financial assistance, suggesting that a matching \$100 con-tribution might be appropriate. After discussion, it was moved and seconded for ABS to pay the presi-dent's round-trip air fare to Oklahoma City, Okla. An amendment to limit the ABS contribution to \$100 was defeated, and the main motion was passed.

-Arlene Davis secretary

resolution, and confirm that the editor is accountable to the ABS board and its publications committee.

Research director named

Anthony P. Croce of Newton, Mass., a science teacher and member of the Buxton Branch, is ABS' new research director. Tony was appointed by President Gil Estrada and the appointment was ratified by directors March 18.

Tony succeeds Corliss Engle, who resigned after 11/2 years as director and codirector.

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.

BEGONIAN BACK ISSUES—Individual copies of The Begonian more than a year old are available from the back issue sales chairman (75 cents). A full year is \$6.50 for any year in the 1940s. \$5 for any year from 1950 through 1979. 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 manager. 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 \$8. Also available are a booklet on point scoring \$1.25, information on fuchsia and fern judging, and other requirements to become a judge. Add \$1 postage and handling to all orders and 6% tax for California residents.

LIBRARY—Books about begonias and gardening may be borrowed by mail from the lending library. Con-

tact 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.

QUESTION BOX—Send begonia-growing questions to veteran collector Elda Haring, P.O. Box 236, Flat Rock, NC 28731. You'll get a prompt answer and Elda will use questions of general interest in her Begonian column.

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 the director.

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

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

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

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

BEGONIAN MINI-ADS

Begonias. Episcias. African violets. Cuttings only. Catalog \$1. Kit Jeans, the Gift Horse Greenhouse, Rt. 1, New Johnsonville, TN 37134.

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

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

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

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

Rare & unusual Begonias, including new Lowe hybrids. Rooted & unrooted cuttings. No shipments to Calif. Price list Mini-ads are \$1 per line per insertion with a minimum of \$4. A line is about 38 characters including punctuation and spaces. Payment must accompany order. Send to Pam Mundell, advertising manager, 2324 Connie Dr., Sacramento, CA 95815.

50¢ Paul Lowe, 1544 West Rd., Lake Park, FL 33403.

New catalog — begonias, gesneriads, violets, cacti & succulents and more. Semiannual supplements sent. Send \$1.50 to Robert B. Hamm & Assoc., 2951 Elliott, Wichita Falls, TX 76308.

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

Begonias: Over 100 rhiz., rex, canes. List 45¢. 20 different only 15.95 pp. Semps 50¢, doubles 65¢, also violets, ferns, cactus. Atkinson's GH, Rt. 2, Morrilton, AR 72110.

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