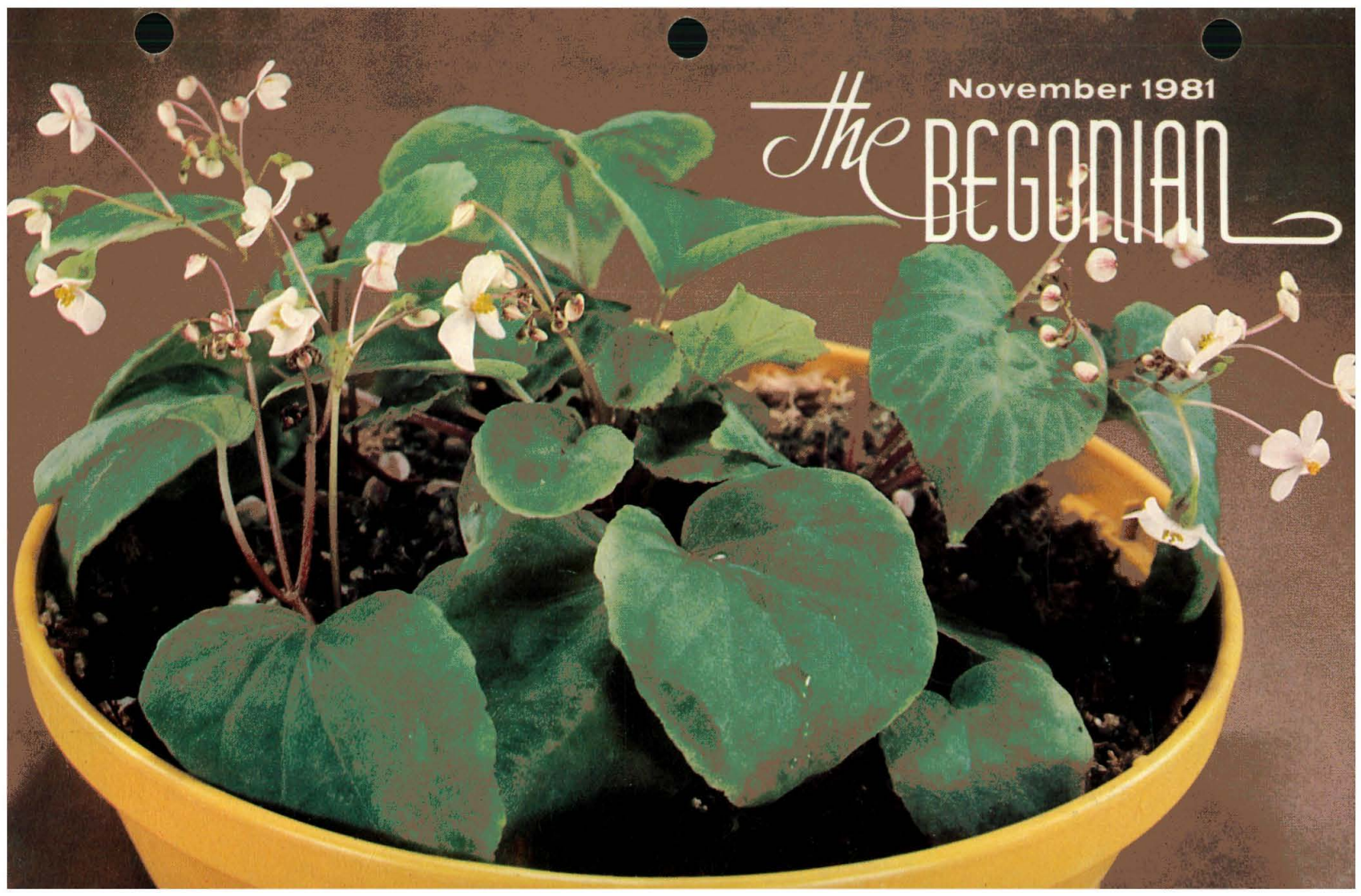
November 1981
The BEGONIAN

the BEGONIAN

Publication of the American Begonia Society

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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.

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

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See inside back cover

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INSIDE/ *November 1981*

THE COVER: *Begonia ovatifolia* var. *cretacea* was the subject of a grow and study project by the ABS research department. Report of the project group's findings begins on page 232. Photo by Ed and Millie Thompson. All rights reserved.

NOTES/ *From the editors*

We feel you should be aware that five ABS branches—or their representatives—have either called for our resignations as editors, voiced "no confidence" in our editorship, or called into question the editorial quality of *The Begonian.*

ABS directors on Oct. 20 defeated by a vote of 5-10 a motion made on behalf of the Long Beach Parent Chapter calling for our resignations. The vote came after a long, vigorous discussion of the magazine and its costs and content at a special meeting of the board called primarily to discuss the society's financial problems.

A number of branch letters supporting the *Begonian* were read. Chuck, attending the meeting on our behalf, abstained from voting.

The Whittier Branch, in a letter dated Sept. 9, told the Executive Board—ABS' elected officers—that *The Begonian* should be "reviewed and improvements made in order to meet needs and desires of members in a more comprehensive manner."

The Long Beach Parent Chapter, in a letter from its national director, Muriel Perz, dated September 1981 but not signed, charged that:

☐ The editors have stopped copyrighting *The Begonian.*

☐ The editors fail to itemize their bills.

☐ The editors have eliminated the president's message "and instead waste the first page on their rambling opinions."

The same letter asked directors to request our resignations as editors and Chuck's as president-elect, then urged members to "work for the good of the AMERICAN BEGONIA SOCIETY."

Also calling for the editors' resignations was the Garden Grove Branch. In an undated letter, it said:

"Our society is faced with the spectre of bankruptcy if the present trend continues. Most of this problem is caused by the rapidly escalating cost of editing, printing, and mailing *The Begonian.* In spite of these rapidly growing costs, *The Begonian* has declined in size and quality until it has become a puny 12-page leaflet, not a magazine by any stretch of the imagination."

Garden Grove members called for elimination of computerized membership records, a switch in *Begonian* printers, and the "immediate resignation of editors Chuck Anderson and Karen Bartholomew."

The Orange County Branch's board on Sept. 30 voted "no confidence" in Chuck as co-editor. No mention was made of Karen in its Oct. 8 letter to Chuck, President Gil Estrada, and secretary Arlene Davis.

This letter contained no explanation.

Since receipt of the Orange County letter, we have been told that the Rubidoux Branch sent a letter to ABS directors —we have not received it as of press time—insisting that most *Begonian* articles are not suited "for the layman."

We also understand that the Whittier Branch has sent a second letter, but we have not seen it.

ABS directors, including all branch national directors, received our response in a letter dated Oct. 12. All these letters are on file with the ABS secretary.

—C.A. & K.B.

Photo/Lynda Goldsmith

Begonia-gesneriad greenhouse at Montreal Botanical Garden

Visiting Montreal's big begonia garden

Lynda Goldsmith

Wherever I travel, I seek out begonias. Although I'm gratified to find a few begonias tucked into some corner of every botanical garden I visit, the results of my search are mostly disappointing. Why is the wonderful variety of this genus not emphasized in the collections open to the general public?

Happily for me, one of the public displays that *does* devote quite a bit of space to begonias is right in my own backyard, the Montreal Botanical Garden. There is a large begonia-gesneriad house where approximately 150 hybrids and species of *Begonia* can be seen. The plants are well cared for and clearly labeled. Although a few of the labels are not entirely up-to-date or accurate (for instance, a hybrid name may be written as though a species), every plant has a label, and the labels can be clearly read from the walk.

Many of the varieties there were new to me, a grower of limited experience; a few of them, I suspect, would make even the best growers among us drool. Among the species new to me were *munita, undulata, venusta, pruinata, estrellensis, obscura, dominicalis, purpusii,* and *karwinskyana.*

Particularly lovely or interesting hybrids included 'Silver Star', 'Robin', 'Gretel', 'Interressanta', and my favorite, an exquisite *masoniana* x *decora* cross with pustular leaves of deep brown with green veins and with coral pink flowers held

Lydia Goldsmith of RFD 2, Fairfax, VT 05454 is ABS branch relations director. She is compiling a guide to public begonia collections. Please write her with details of public gardens with begonias, commercial growers, and private collectors who would welcome visitors. Include, if you can, hours, address, admission policy, and a description of the collection.

The begonia collection at Montreal

Denis Barabé

The maintenance of systematic, specialized collections has an important place at a botanical garden. They give amateurs the opportunity to familiarize themselves with new species. They allow researchers to undertake anatomic, morphological, and taxonomic studies of a particular group; thus they assume both educational and scientific functions.

The *Begonia* collection at the Montreal Botanical Garden is composed of 165 species and 400 cultivars and is therefore able to play these two roles adequately. The *Begonia* genus includes between 700 and 900 species (depending on the author); our collection therefore constitutes a good sampling, as well as representing several different regions. In table I, I have subdivided the species in the Botanical Garden's collection according to place of origin, using the Barkley and Golding (1974) classification as a point of reference. [1] Because nearly 70 percent of all described species have American origins—of these, 27 are limited to Mexico and 64 to South America, 48 of which are found only in Brazil—it is not surprising to note that a similar proportion is found in the collection. Asia and Africa are represented here with 17 percent and 15 percent species, respectively. Of the 400 cultivars in the collection, 250 were acquired from "Les Floralies internationales de Montréal (1980)."

A greenhouse has been specially equipped to show off the ornamental possibilities of the begonias and gesneriads, while enabling the public to discover the different species and cultivars of these two groups of exceptional plants. Close to 75 species and 75 cultivars of begonias are planted in an original design with various gesneriads (*Columnea, Gloxinia, Streptocarpus, Saintpaulia,* etc.).

When one specimen declines and loses its lustre, it is generally replaced by another. We generally keep two or three replacements on hand for each of the specimens displayed in the exhibition greenhouse if they are rare or difficult to cultivate. These are kept in a service greenhouse equipped for conservation and

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above the foliage. (This, I learned, is known in the United States as *B.* 'Eagleshamm'.)

On my most recent visit, after obtaining a pass to visit the service greenhouse, I was lucky enough to meet the begonia gardener, Mr. Trefflé Courchesne. We compared notes on growing begonias in our climate, and I learned that the temperature of the 60′ by 60′ greenhouse is 55° at night. (New acquisitions and newly propagated plants are kept in a much warmer, small glasshouse.)

As I toured the greenhouse, I found a dizzying number of begonias claiming my attention. Here a group of towering *B. wollnyi,* full of flowers on otherwise naked stems, looked like a surrealistic stage set. On another bench half a dozen *Hillebrandia* were just breaking dormancy. And over there was a whole row of *B. cathayana*! In this greenhouse also were more little-known—or neglected—treasures: 'Gilsonii', *carpinifolia, seychellensis,* 'Regalia', *augustinei, lindleyana, annulata,* 'Vedderi', *johnstonii.*

But there was too much to absorb in a single visit. I shall certainly return again and again to this wonderful collection, and heartily recommend that any traveler who can include Montreal in an itinerary do so.

If you go, the Botanical Garden is easily reached by Metro or by car. Follow Sherbrooke east until you see the brown signs directing you to the Garden. Parking and admission are free. The public conservatory is open daily 9-6. You may be able to obtain a pass to the service greenhouse if you let them know in advance when you're coming. Write to le Jardin Botanique de Montréal, 4101 est, rue Sherbrooke, Montreal, Quebec H1X 2B2, Canada.

propagation.

According to the general index of Montreal's Botanical Garden[2], our first begonias were ordered by Henry Teuscher[3] and arrived in 1938. But it was particularly between the years 1956 and 1962 that the collection was so exceptionally developed, thanks to the efforts of Henry Teuscher and his colleague Edgar Irmscher, one of the foremost *Begonia* experts. During this period, Teuscher corresponded regularly with Irmscher,[4] to whom he sent various samples of the collection. They were mainly plants bought commercially or obtained from other botanical gardens.

The Montreal Botanical Garden's collection included 90 species identified by Irmscher himself, and made up an important reference collection. Like several people who write him requesting information on begonias, Teuscher envisioned the publication of an illustrated guide of this genus' species, principally based on the botanical garden's collection. Unfortunately this project never saw the light of day.

After Teuscher's departure, the collection's development slowed down as far as the acquisition of new species was concerned. In effect, from 1963 to 1979, only 12 species were added, compared to some 40 cultivars. But recently, in view of its morphological and taxonomic research on the Begoniaceae, the Botanical Garden decided to increase the number of species in the collection.

As recently as November 1980 we received 15 species from the botanical garden in Hiroshima. As well as begonias, we hope to acquire specimens of the other Begoniaceae genera.

To fulfill its educational function adequately, and also to develop judiciously, a collection also must become a subject of scientific research. The scientific studies on the Montreal Botanical Garden's specimens go back to the 1940s, when Roger Gauthier, then professor at the Botanical Institute of the Université de Montreal studied the floral anatomy of five species of *Begonia*, four of which were cultivated at the botanical garden: *B. dregei, B. socotrana, B.* 'Erythrophylla', and *B. fuchsioides* (Gauthier, 1950).

Photo/Romeo Meloche

***Hillebrandia sandwicensis* at Montreal**

The begonia collection also played a scientific role, when Teuscher sent several specimens to Irmscher for identification. This exchange probably enabled Irmscher to acquire interesting specimens and his collection in Montreal to mount a solid reference collection. Moreover, it is from a specimen sent by Teuscher that Irmscher described *Begonia masoniana* named for M. L. Mason, the English horticulturist who introduced this species into cultivation when he brought back a plant from the Singapore Botanical Garden in 1925 (Irmscher, 1959). To my knowledge, no other species have been described from plants in the Montreal Botanical Garden.

On the horticultural side, Bob Eglesham, former gardener in charge at the Botanical Garden, obtained a very beautiful hybrid by crossing *B. masoniana* and *B. decora*. This rhizomatous begonia, a beautiful wine color, is sold in the United States under the name *Begonia* 'Eglesshamm' [5].

A rare species, *Hillebrandia sandwicensis*, of the Begoniaceae family, is found in the Botanical Garden collection. This unique species of the genus *Hillebrandia* is found only on some islands in the Hawaiian archipelago, formerly called the Sandwich Islands, from which the plant derives its specific name. The *Hillebrandia* specimens were introduced to Montreal's Botanical Garden by Teuscher, who collected the bulbs in Hawaii[6]. These plants, which have flourished regularly since

1958, enabled Roger Gauthier to obtain fresh material to complete his anatomic study of the *Hillebrandia* flower (Gauthier, 1959; Gauthier and Arros, 1963; Gauthier et al, 1968).

The *Hillebrandia* genus is similar to the *Begonia*. However, it differs in a certain number of characteristics, notably its flowers, which have a semi-inferior, non-winged ovary and a well-differentiated perianth in the calyx and the pentamerous corolla[7]; five rudimentary pieces, like petals, alternate with five petaloid sepals (Gauthier, 1959).

Realizing the value of its *Begonia* collection, the Montreal Botanical Garden decided to improve upon it and use it to increase our knowledge of this group. To do this, I have undertaken a taxonomic and morphological study of the Begoniaceae family in collaboration with Professor Luc Brouillet from MacDonald College. This long-term project should enable us to maintain a reference collection useful to horticulturists and botanists, and to make a scientific contribution to the study of this family.

(1) In table I, the total does not correspond to the number of species in the collection because I have not taken into account the species for which Barkley and Golding (1974) have not given a distribution.

(2) All of the plants at the Montreal Botanical Garden are registered in a general card-index and are listed by genus.

(3) Henry Teuscher was the first curator at the Montreal Botanical Garden. He planned it and directed the first landscaping work (Bouchard, 1976).

(4) Edgar Irmscher, a German botanist, was born in 1887 and died in 1968. He published several basic taxonomic works concerning the *Begonia* genus. His herbarium and several of his manuscripts are at the Berlin herbarium. (Stafleu and Cowan, 1979.)

(5) Bob Eglesham was the gardener in charge of Begonias from 1956 to 1977. When he retired he was replaced by Treflé Courchesne, who is currently responsible for the collection.

(6) In 1946 an experiment to reproduce *Hillebrandia* by seeding was tried without success.

(7) As has been demonstrated already (Barabé, 1980, 1981), certain species of *Begonia* also possess a differentiated perianth in the calyx and corolla, even if it is not always evident in the external morphology.

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TABLE I. Distribution of species in the Montreal Botanical Garden collection.

North America		Venezuela	4	Sumatra	2
Mexico	27		64	Vietnam	1
	27	**Antilles**			25
Central America		Cuba	2	**Africa**	
Costa Rica	6	Jamaica	3	Tropical Africa	3
Guatemala	1	Santo Domingo	3	East Africa	1
Honduras	1	General	1	West Africa	1
General	2		9	South Africa	3
	10	**Asia**		Seychelles (islands)	1
South America		Borneo	2	Tanganyika	1
Argentina	2	China	5		10
Bolivia	2	Himalayas	5	**Oceania**	
Brazil	48	India	3	New Guinea	2
Colombia	5	Indo-China	1		2
Ecuador	3	Malaysia	4	TOTAL	147
		Philippines	2		

How members grow B. ovatifolia

Larry Daigre

A research project, including a "grow and study" effort, was undertaken by 10 members of the ABS in spring of 1979 to study *B. ovatifolia* A. DC. To date very little has been written about this low-growing tuberous species discovered about 150 years ago in the Kashi Hills in the state of Assam in northeastern India. Likewise, details about its culture were not well known.

Careful observation by "grow and study" members revealed that the specimens being grown were not *B. ovatifolia* A. DC. but rather a nearly identical variation, *B. ovatifolia* var. *cretacea*. This begonia originated in Bhutan, which borders Assam on the north, and in the Kashi Hills of Assam.

Though this report focuses on *B. ovatifolia* var. *cretacea,* much information about *B. ovatifolia* A. DC. has been included. The descriptions of the natural habitat apply equally to these two begonias.

Origins

Dr. Nathaniel Wallich, superintendent of the Calcutta (India) Botanic Garden from 1815 to 1835, prepared a catalog of more than 9,100 plants including 23 begonias. His entry number 3683, dated 1831, lists *Begonia subovata* Wallich and notes that the species was found in Sillet (which is the Kashi Hills or "Kashi Mountains"). The Kashi Hills are situated between the Brahmputra River on the north and west and the Surma River on the south in the state of Assam. Assam is bordered by Bhutan and Tibet on the north, by Burma on the east and by Bangladesh on the south and west. Because the name *B. subovata* Wallich was published without a description (*nomen nudum*), it is not a valid name.

Alphonse de Candolle, a French botanist, published the description of this species in Latin in 1859 as *B. ovatifolia*. The correct identification is *B. ovatifolia* A. DC. (syn. *B. subovata* Wallich). De Candolle's description is on page 132 in Volume II of Series 4, *Botanique*, of *Annals des Sciences Naturalles* (Annals of Natural Science). The translated description notes that the species was found in Kashia in northern India. In 1864 de Candolle published a more detailed description in *Prodomus Systematis Naturalis Regni Vegetabilis* and, in addition, stated that specimens were also collected in Sikkim. De Candolle has described many other species of *Begonia*.

Sikkim is an independent state (near Assam) bounded by Nepal on the west, Bhutan on the east and Tibet (China) on the north. To the south lies Bangladesh, formerly called East Pakistan. The Himalayan Mountains dominate Nepal, Tibet, and the entire border of northern India. As a point of interest, Mt. Everest is about 100 miles west-northwest of Sikkim. *B. ovatifolia* A. DC. is further described by C. B. Clarke in Hooker f. on page 642 of volume 2 of *The Flora of British India* published in London in 1879.

B. ovatifolia var. *cretacea* is briefly described by C. B. Clarke on page 643 of *The Flora of British India,* volume 2, which notes that the species was found in Bhutan and in the Kashi Hills. Bhutan is bordered on the west by Sikkim, on the north by Tibet, and on the south and east by Assam.

B. ovatifolia is briefly mentioned in an article entitled "Himalayan Begonias" by B. N. Ghose of Darjeeling, India, which was published in *The Begonian* in June 1949 and reprinted in April 1957. This article describes Himalayan begonias in

Larry Daigre of 315 Bonnabel Rd., Metairie, LA 70005 was a member of the ABS research department's grow and study project on B. ovatifolia. *Others contributing to this report were Louise Bower of Oxnard, Calif.; Ben Herman, Tucson, Ariz.; Pat Maley, El Cajon, Calif.; Keith Mautino, Santa Barbara, Calif.; Brad Neugenbauer, Dallas, Tex.; John Scott, Essendon, Victoria, Australia; Millie Thompson, Southampton, N.Y.; Marie Treat, Pittsburgh, Pa., and Herb Warrick, Seattle, Wash.*

Individual observations

John Scott Essendon, Victoria, Australia: Specimens of *B. ovatifolia* var. *cretacea* were started from seeds sown in finely milled sphagnum moss. Germination was prolific within three weeks. The seedlings were potted separately into 2-inch pots where they remained for the first year until they went dormant at the beginning of winter. Tubers were stored practically dry during the five months of winter. When they showed signs of life in early spring, they were put in 3-inch pots in a mix of equal parts of peat moss, coarse river sand, vermiculite and rice hulls to which pulverized sheep manure was added. About 10 weeks later flowering began and lasted until dormancy approached. When active and blooming, the plant is grown under a misting system which simulates its native habitat of the monsoon season in the Himalayan Mountains. Conditions of light during the active growth period were not described. The plant grew to a height of 12-15 cm and was about 25 cm across and in one case developed a root system made up of 9 small tubers. The culture was described as "very easy" and no problems regarding pests or diseases were mentioned.

Pat Maley, El Cajon, Calif.: A specimen of *B. ovatifolia* var. *cretacea* was grown under artificial light in a cut moss-perlite mix in a 12-inch bubble. The bubble was placed about 18 inches below the lights and the plant eventually filled the bubble. In this environment the plant blooms prolifically off and on all during the year and at no time goes completely dormant.

"Selfing" the plant was successful but attempts in other crosses using it were not successful. Leaves which fall from the plant and rest on the top of the mix may occasionally develop roots and produce tiny leaflets around the edge.

The plant was described as "an attractive plant for light gardening" and no mention was made about problems with pests or diseases.

Larry Daigre, New Orleans, La.: *B. ovatifolia* var. *cretacea* was grown in a greenhouse under natural light only with no direct sunlight. The plant was grown in a 2-inch plastic pot in a soilless mix (50 percent coarse peat moss, 25 percent coarse perlite, 25 percent vermiculite plus a small amount of dolomite lime). The pot was set on a bed of damp sphagnum moss inside a "sweater box" terrarium.

Active growth began in early March with first leaves maturing within 3 or 4 weeks. Open flowers occurred in mid-June and continued without interruption into mid-September at which time the plant began to lose leaves with complete dormancy beginning in late October. The plant achieved a height of about 15 cm with an erect growth habit until late August when the stems became more lax and "trailed" over the pot rim. The plant was fed with half-strength balanced liquid fertilizer about every other week during its active season. It is not plagued by pests or disease.

The tuber need not be dug up in winter if watered only very sparingly (as in its natural habitat) and not fed.

general and briefly discusses 16 species in particular, including *B. picta, B. roxburghii,* and *B. rex.*

Climatic conditions of native habitat

B. ovatifolia var. *cretacea* and *B. ovatifolia* A. DC. grow in a typical monsoon climate: humid with distinctive rainy and dry seasons. Sikkim, Bhutan, and the Kashi Hills are subtropical zones similar to regions of Africa and South America where numerous species of *Begonia* originate. The summers are warmer and winters cooler (but free of excessive cold at any season of the year) compared to other regions of similar latitudes: north of the Tropic of Cancer between 20 and 30 degrees north latitude.

The rainy season begins in April as the Himalayan Mountains force the humid southerly winds of the monsoon to rise, cool, and condense, inducing heavy rainfall. The rainy season peaks in July and early August and usually ends in October. During these seven months, most regions receive about 100 inches of rain. Locally, heavier amounts, up to 400 inches, are possible.

By contrast, during the peak of the dry season (December through February), usually less than one inch of rain per month is received; November and March usually produce less than two inches each.

Even during the peak of the rainy season, on the average rain falls about two days out of three and typically is in the form of short, intense showers with sunshine in between. Therefore, there is always some drying-out period between rains in spite of the heavy amounts.

Relative humidities are moderate (40-60 percent) during the spring, but are high (70-90 percent) during the rest of the year.

Temperatures, of course, depend strongly on elevation. The Himalayan Mountains to the north shield the region from the severe winter cold of the Tibetan Plateau north of the mountain range as evidenced by the relatively mild winter temperatures: average nighttime temperatures range from 40-45 degrees at 4,000 feet to about 50-60 degrees at 1,000 feet with average daytime temperatures about 15 degrees higher. At the higher elevation, a short-term occasional drop to near-freezing may occur. Summer temperatures at night range from 65-70 degress at 4,000 feet to about 80-85 degrees at 1,000 feet with average daytime temperatures 10-15 degrees higher. In the spring months, temperatures above 90 (occasionally above 100 degrees) occur, but during the peak of the rainy season the afternoon cloud cover keeps temperatures down so that 100-degree readings almost never occur after the middle of June.

Clarke's descriptions state that *B. ovatifolia* A. DC. was found at elevations of 1,000 and 4,000 feet in Sikkim and at 4,000 feet in the Kashi Hills and that *B. ovatifolia* var. *cretacea* was found at an elevation of 4,000 feet in the Kashi Hills. This gives valuable clues in determining the culture as it relates to temperature.

Ghose's article notes that most Himalayan begonias flower in the summer and "have the ordinary habit of shedding their stock or leaves toward the end of autumn and remaining bare till spring."

To summarize, *B. ovatifolia* var. *cretacea* and *B. ovatifolia* A. DC. in their natural habitat would appear to have a growing season in which dormancy ends around April, with active growth and flowering during the summer and dormancy setting in again in late October. During the active growing season, daytime temperatures between 75 and 95 degrees and nighttime temperatures between 65 and 85 degrees seem acceptable. During the dormant period, relatively dry soil conditions with cool to moderate temperatures (55-75 degrees day; 40-60 degrees night) prevail. Moderate humidities of 40-60 percent seem acceptable when growth begins but higher humidities of 70-80 percent seem ideal during the rest of the growing-flowering season. During dormancy, humidity is probably not a significant factor. As we shall see, our "grow and study" efforts tend to support these conclusions. (We are grateful to Ben Herman of Tucson, Ariz., for his detailed information concerning the environment in the native habitat of *B. ovatifolia.*)

Description

For horticultural purposes, *B. ovatifolia* var. *cretacea* should be classified as tuberous, species, low growing, according to the *Thompson Begonia Guide* classification method. *The Thompson Begonia Guide,* in fact, classifies *B. ovatifolia* A. DC. as tuberous, species, low growing. Grow and study observations reveal that *B. ovatifolia* var. *cretacea* grows to a height of 12-15 cm. The detailed description that follows is a condensation of the botanical descriptions of de Candolle and Clarke and includes additional observations (color, measurements, etc.) made by members of the "grow and study" projects.

Leaf blade—The leaves are roundish or ovate up to 10 cm long (typically shorter) and 8 cm wide, the ratio of length to width being between 1.1 and 1.3 to 1. The base is cordate or subcordate and the apex is acute. The 7-8 veins or nerves (occasionally 9) are arranged palmately. The margin is subentire or denticulate. The upper surface is light to medium green with a few minute silver flecks and somewhat hairy. The underside is very pale green, almost whitish. Young leaves have quite short (less than 1 mm) red hairs

on the upper surface more numerous near the base and on the veins on the underside. The red hairs tend to disappear with age and become white hairs in significantly fewer numbers. According to Clarke's description, *B. ovatifolia* var. *cretacea* is (more) "shaggy on the nerves beneath" (than *B. ovatifolia* A. DC.). This is somewhat subjective, especially without a specimen of *B. ovatifolia* A. DC. for side-by-side comparison.

Petiole—The petiole may be up to 9 or 10 cm in length but is more typically 5 to 7 cm long with a diameter of 2 mm, tapering to 1.5 mm at the point of attachment to the leaf blade and is sparsely hairy. The petiole has three color zones (similar to *B. masoniana*): It is clearly celery green nearest the leaf blade and becomes clearly reddish ("plum" but not purple) where it emerges from the stem with a transition zone in the middle. The reddish zone tends to fade somewhat with age, but does not disappear. The stipules are quite small (1-2 mm) and lanceolate.

Peduncle—The peduncles are succulent, rather fragile (easily broken), though "firmer" (than *B. ovatifolia* A. DC.), according to Clarke, and carry the flowers above the leaves. The peduncles are glabrous or slightly pubescent and are 5 to 7 cm long to the point where the cyme begins. Pedicels are 1 to 1.5 cm long and about 1 mm in diameter. The bracts are quite small (1-2 mm) and lanceolate.

Flowers—The inflorescence contains 4 to 8 flowers which are rather small (about 1 to 1.2 cm in diameter) and white to pale rose with tiny red hairs visible before the flower opens, diminishing or disappearing as the flower matures. There are several short reddish streaks at the base of the tepals' outer surface.

The staminate flower (male) contains about 20 stamens, has 2 tepals, obovate, up to 1.2 cm when fully spread (measured horizontally from tips of tepals), and 2 tepals, narrow-obovate, up to 1 cm when fully spread (vertically).

Please turn to page 238

QUESTION BOX/ *Some tips on Florida growing*

Elda Haring

Question: I live in Florida. Can you give me some pointers on growing *B. versicolor, B. paulensis, B. gehrtii, and B. olsoniae*?

Answer: Florida's summer heat and humidity are very hard on begonias but as soon as fall arrives with cooler weather they perk up and grow well. Of those you mention, *B. paulensis, B. versicolor,* and *B. olsoniae* are all considered difficult.

Both *B. versicolor* and *B. olsoniae* should be grown indoors where it is cool and are best grown in terrariums or bubbles.

If humidity is high in your house, they should not be covered during summer or some leaves may mold. Should this happen, remove the damaged leaves, keep the soil almost dry, and they will grow again when conditions are right. Where you live, I suggest that you do not fertilize *B. paulensis* in summer but permit it to rest as it prefers cooler days to do well.

Question: I have been told there are a number of begonias with fragrant flowers. Can you name some?

Answer: *B. solananthera* has a very strong fragrance and perfumes the whole greenhouse in the humidity of the morning. Others with faintly fragrant flowers in my collection are *B. epipsila, B. acuminata, B. decora, B. egregia, B. venepi, B. venosa, B. evansiana, B. hydrocotylifolia,* and *B. nitida odorata.* If you have access to *The Thompson Begonia Guide,* you will find in Volume II bloom information and in the left-hand column, the letters *fr* indicating which begonias listed are fragrant.

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

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* 'Golden Goddess'**
No. 831—*Begonia strigillosa* x unknown 'Golden Goddess'

Rhizomatous with erect 7" stem. Spiraled, cleft, 5" x 3½" leaf blades are smooth and leathery, chartreuse with golden-brown markings and 8 veins. Petioles are light pink; stipules, light green. Sparse, pale-pink, ½" x 1½" flowers are 2-tepaled in clusters atop 8" peduncles in winter. Originated in 1979 by Leslie Woodriff, 1100 Griffith Road, McKinleyville, CA 95521; first bloomed and distributed in 1980. Registered Aug. 4, 1981.

***Begonia* 'Speckled Spear'**
No. 832—*Begonia* 'Norah Bedson' x *herbacea* 'Speckled Spear'

Rhizomatous with unusual foliage. Narrow, oblanceolate, 6" x 2½" leaf blades—reminiscent of the pollen parent in shape—are slightly serrate, smooth and waxy, medium green with chocolate speckling and 4 main veins. Petioles and stipules are light red. Light pink flowers, ½" x ¾", are 2-tepaled in clusters on short, 4" peduncles in winter and spring. A compact plant, *B.* 'Speckled Spear' introduces unusual leaf markings into the *B. herbacea* and *B. attenuata* class. Originated in 1978 by Leslie Woodriff (address above); first bloomed and distributed in 1979. Registered Aug. 4, 1981.

***Begonia* 'Alexandria Arndt'**
No. 833—*Begonia* unknown x unknown (chance seedling) 'Alexandria Arndt'

Semperflorens Cultorum group; 2½' or taller. Dark green, heart-shaped, 2" x 2" leaves have ciliate margin, smooth surface, 1" petiole, and ¾" x ½" stipules. Lavender-pink flowers, deepening from pale edges to darker center, are 4-tepaled (male and female) in clusters on 4" peduncles and everblooming. "A bright and cheery plant." Originated in 1977 by Bob Cole, 18007 Topham Street, Reseda, CA 91335; first bloomed and distributed in 1978. Registered Aug. 4, 1981.

***Begonia* (Wendy Franks grex) 'Giggle'**
No. 834—*Begonia heracleifolia* form x 'Stained Glass' (Wendy Franks g.) 'Giggle'

Rhizomatous. Bright-green, cleft leaves with scattered black triangular markings are 6" x 5", hairy, and 9-veined. Petioles are 10"-12" long and hairy; stipules, ½" x ¾". White flowers with white-winged ovaries on the females bloom in the spring. Originated in 1977 by Bob Cole (address above); first bloomed and distributed in 1980. Registered Aug. 4, 1981.

***Begonia* 'Pink Colossal'**
No. 835—*Begonia valida* x 'Sylvia Leatherman' 'Pink Colossal'

Thick-stemmed; 4'-6', with reddish nodes. Large, 10" x 7", broadly ovate leaf blades, obliquely cordate at the base, are hairy and dark green on the upper surface, marked with 6-9 hot-pink main veins showing through from underneath. Margins are dentate with larger teeth at the ends of veins. Petioles, shorter than the blades, are 5"-6" long; stipules, ¾" x ½". Pink, 4-tepaled male flowers in forked cymes on 10", pink, pubescent peduncles measure 1" x ¾", with 2 opposite tepals much broader than the other 2, smaller ones. Originated in 1979 by Bob Cole (address above); first bloomed and distributed in 1980; described in Plant Shop's Botanical Garden catalog, 1980, as *B.* (Treelike grex) 'One'. Registered Sept. 2, 1981.

***Begonia* 'Jeaker'**
No. 836—*Begonia heracleifolia* var. *nigricans* x unknown 'Jeaker'

Rhizomatous. Velvet-black, 5" x 4" star leaves, with bright green along the 7 main veins above and beneath, are also red beneath. The blades are hairy and the cleft margins ciliate. Petioles are 8", hairy, red-dotted; stipules, ½" x ¼". Red-dotted pale-pink flowers are borne in forked cymes in spring and early summer. The cultivar's name honors Jean Kerlin, combining the first letters of her two names. Originated in 1965 by Marie Turner (deceased, 1980); first bloomed in 1970; first distributed in 1975; first published in the Plant Shop's Botanical Garden catalog, 1980. Tested by Darlene Fuentes, 2313 Hollister Terrace, Glendale, CA 91206. Registered Sept. 8, 1981.

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 'Knickerbocker'

No. 837—*Begonia hypolipara* x *B. macdougallii* var. *purpurea* hort. 'Knickerbocker'

Rhizomatous. Bright-kelly-green, 6″ x 4″ star leaves with dull green undersurface felted on the veins, have a smooth texture, cleft margin, and 8 main veins, on a medium-sized plant. Petioles are 5″-10″, buff-felted; stipules, ¾″ x ½″. Flowers are white. The name honors the ABS Knickerbocker Branch in New York City. Originated in 1977 by Bob Cole (address above); first bloomed and distributed in 1980; first published in Plant Shop's Botanical Garden catalog, 1980. Registered Sept. 9, 1981.

Begonia 'Oh Tex'

No. 838—*Begonia* 'Bowtique x 'Lospe-tu' 'Oh Tex'

Rhizomatous. Leaf blades are 4½″ x 3″, green with black stitching, bristly surface, ciliate margin, and 8 veins. Petiole is bristled and 7″-8″ long; stipules, ½″ x ⅓″. Pinkish-white flowers are red speckled, blooming in spring and early summer on compact plants. Originated in 1977 by Bob Cole (address above); first bloomed in 1980; first distributed in 1979; described in Plant Shop's Botanical Garden catalog, 1980, under the name *B.* (O grex) 'Tex'. Registered Sept. 9, 1981.

SEED FUND/ *Six begonias and Hillebrandia sandwicensis*

Joy Porter, director, Clayton M. Kelly Seed Fund

NV 1 — *B. boliviensis*: Tuberous species with arching 18-inch stems, narrow dark green leaves and long-petalled scarlet flowers. . . . . per pkt .75

NV 2 — *B. micranthera* var. *venturii*: Tall-growing tuberous species from Argentina with large single orange flowers. Easy. . . . . per pkt .75

NV 3 — *B. grandis* ssp. *evansiana*: Hardy tuberous species from China; 1-1½ feet tall with beautiful red-petioled leaves with red veins. Bright pink flowers have red peduncles and ovaries. Hardy with protection. See cover and story in March 1978 *Begonian.* Produces bulbils in leaf axils. These may be stored during winter to be started indoors where growing season is short. . . . . per pkt .75

NV 4 — *Hillebrandia sandwicensis*: A genus belonging to Begoniaceae and native to Hawaii. Tuberous with large white flowers on 12-inch peduncle. Female flowers have a partially inferior ovary. Not many people reported germination when offered last January. Will not germinate or grow if temperatures exceed 75 degrees F. My seedlings grew until warm weather in May, at which time they shed their leaves, leaving pea-sized tubers on the soil surface. Will probably need two seasons' growth to attain blooming size. Growers in hot climates could try growing in closed containers in air-conditioned room. Fresh seed. (See photo, page 230.) . . . . . per pkt 1.00

NV 5 — *B. tovarensis*: Probably a variety of *B. fischeri.* See cover of March 1979 *Begonian* and story in January 1981 *Begonian.* This seed and those of the following two are long and thin with a hook on one end. I have found that seed with this shape has a short period of viability and I wanted to make them available as quickly as possible. That is why they are being offered in the tuberous listing. . . . . per pkt 1.00

NV 6 — *B. parvifolia*: See story by Carrie Karegeannes and Jack Golding in January 1981 *Begonian.* . . . . . per pkt 1.00

NV 7 — *B. setosa:* Possibly another variety of *B. fischeri.* . . . . . 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.

ROUND ROBINS/ *The report will return next month*

More B. ovatifolia

From page 235

The pistillate flower (female) develops after the males. It is here that the chief difference between *B. ovatifolia* var. *cretacea* and *B. ovatifolia* A. DC. may be observed. *B. ovatifolia* A. DC. has a total of 3 tepals whereas *B. ovatifolia* var. *cretacea* has a total of 4 tepals and, in this respect, is "almost exactly like the male." Two tepals are slightly less than 1 cm when fully spread (tip to tip) and 2 tepals about 8 mm tip to tip vertically. The ovary is quite small (3 or 4 mm long) and has three cells containing minute ovules with three wings, one of which is larger than the other two. There are 3 styles that are divided halfway into two curved branches terminated by stigmas.

Tuber—The tubers are typically 5 to 6 mm in diameter, though a tuber 16 mm in height and 10 mm in diameter was measured by a "grow and study" project member. Roots of up to 2 cm in length have been observed on 5 mm diameter tubers.

Reproduction—Reproduction is from seed, tubers developed by the plant during its active growing period, and vegetative means such as leaf cuttings. No detailed information regarding vegetative reproduction is available at this writing, however, and research in this area is continuing.

Summary

B. ovatifolia var. *cretacea* is a small begonia which is relatively easy to grow and apparently resistant to pests and diseases. It requires warm temperatures and rather high humidity and is tolerant of growing mix as long as it is coarse and drains easily. It is a rather prolific bloomer. It will go dormant around mid-autumn and resume active growth in early spring unless grown under artificial light in a controlled humidity-temperature environment. Though not a "spectacular" begonia in terms of foliage, flowers, etc., it has a number of interesting characteristics and is a worthy member of the serious grower's collection.

More Montreal

From page 231

l'interprétation de la fleur pistillée de l'*Hillebrandia sandwicensis* Oliv. *Phytomorphology*, 9: 72-87.

Gauthier, R., and J. Arros, 1963. L'anatomie de la fletur staminée de l'*Hillebrandia Sandwicensis* Oliver et la vascularisation de l'étamine. Phytomorphology, 13: 115-127.

Gauthier, R., M. Famelart, and J. Arros, 1968. Further Observations on the flower of *Hillebrandia sandwicensis* Oliver. Phytomorphology, 18: 211-215.

Irmscher, E. 1959. *Begonia masoniana* Irmscher. The Begonian, 26: 202-203.

Stafleu, F. A., and R. S. Cowan, 1979. Taxonomic literature. Volume II, Regnum vegetable, Vol. 98. Bohn, Scheltema & Holkema, Utrecht, Junk, Hague. 991 pp.

In memoriam

Paul Lee

Paul Lee of San Diego, Calif., who with his wife Margaret amassed one of the largest begonia collections in the United States, died Aug. 19.

He had attended the annual ABS convention just three days earlier

An ABS member for 28 years, a senior ABS judge, and national director of San Miguel Branch for 10 years, Paul won with Marge ABS' Herbert P. Dyckman service award in 1978 and his popular *B. rex* cultivar *B.* 'Purple Petticoats' won ABS' Alfred D. Robinson Medal of Honor in 1968.

'Purple Petticoats', voted ABS members' favorite Rex Cultorum begonia last year, was one of many noted hybrids created by Paul and Marge.

Others included another *B. rex* cultivar, *B.* 'Patapsco'; canes *B.* 'Phantom', 'Kristy', 'Nokomis', 'Osota', 'Pink Slate', and 'Lana'; and rhizomatous *B.* 'Smidgens', 'Paiute', and 'Huopo'.

Paul, according to Marge—chairman of ABS' Judging Department—"was my most ardent supporter, patient sounding board, and tireless chauffeur."

Board meets Nov. 16

ABS directors will meet at 7:30 p.m. on Monday, Nov. 16, at Fullerton Savings & Loan Assn., Anaheim, Calif. All board meetings are open to members.

The board met Oct. 20 rather than Oct. 19, as was announced in error in *The Begonian* in October.

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. 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.

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.

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