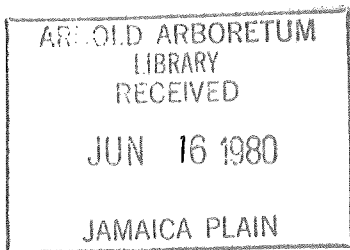


CROSS WORDS

THE GESNERIAD HYBRIDIZERS ASSOCIATION

NEWSLETTER

Am
CAL



Volume 4, Number 1, March 1980

Several issues ago a suggestion was made that the GHA sponsor trial testing of gesneriad hybrids with a view to giving awards recognizing outstanding overall merit. For logistical reasons this now seems unlikely. It might on the other hand be relatively easy to conduct a poll of sorts. A committee might receive nominations for awards, publish a list of nominees and receive 'ballots'. Winners could be recognized through a series of annual awards in various categories. Initial awards might be for hybrids which have been available for some time. Eventually, hybrids could be awarded as soon as they gain sufficient distribution to be known to a significant portion of GHA members. Let us know what you think.

Roger Strickland makes a proposal in this issue for the development of an information table for the culture of various gesneriads. It seems like an excellent idea. Anyone interested might correspond with Roger and we would appreciate receiving a copy of the letters.

As you will note, this issue is thin. We have not received enough material to fill our hoped-for 16 pages. You, the members, must supply us with articles, questions, comments or whatever if *CrossWords* is to survive. Please don't be afraid to ask questions or let us know about your efforts at hybridizing. All information is of interest. Please get material to us as soon as possible - it is sometimes possible to print material received after the nominal editorial deadline, but we will be pressed for time if you delay too long.

Ron Myhr
Anne Crowley

TABLE OF CONTENTS

<i>Seed Exchange by David Zaitlin</i>	2	<i>Glossary for Hybridizers, Part IV Vestiture and Textures by Frances Batcheller</i>	6
<i>Table of Growing Information by Roger Strickland</i>	3	<i>Hybridizing in the Genus Episcia by Hans Wiehler</i>	8
<i>Yellow Nematanthus Anyone? by Bill Saylor</i>	4		

SEED EXCHANGE

David Zaitlin
Tucson, AZ

With this first issue of 1980, I find myself in an uncomfortable position; I am forced to make an appeal directly to you, the membership of the G.H.A. It is now three issues since the concept of the seed exchange first arose, and although it has been mentioned in every succeeding issue, I still have received no support from the constituency. This is a hybridizers' association - doesn't anyone produce spare seed? I work only with sinningias, and then solely with the diploid species and hybrids, and I know that I have more seed than I could conceivably use. It certainly does not need belaboring, but the G.H.A. seed exchange will cease to exist other than in the minds of men if the members refuse to contribute. I hope that this diatribe has not been too inflammatory, but the seed exchange is a good concept, one that I would like to see flourish. So once again, if you have seed to share, be it of simple or complex hybrids, intergenerics or stable lines of interesting parental clones, send me a list and your address for publication. I would also appreciate additional information such as date of harvest, viability and germination times if available. Also, for those gesneriads that possess such structures, a tuber/rhizome bank might be established.

As organizer of the seed exchange, I would like to make the initial contributions:

- (1) *Sinningia* ('New Zealand' X 'Alruth') selfed and sibbed: plenty of viable seed from large-flowered, dark leaved plants less than 18 inches high. The parents of this seed show no tendency to drop the lower leaves with age.
- (2) *Sinningia* ('Rex' X 'Coral Belle') X 77-108: recently harvested seed in moderate quantity, viability undetermined. The pollen parent is a vigorous, symmetrical *cardinalis* hybrid from Ted Bona. Expect some compact plants with very red flowers here.
- (3) *Sinningia* 77-108 X (*S.* 'Pink Eumorpha' X *S. magnifica*): this seed was harvested in early January, so nothing is known about the cross. The male parent used here is a medium sized plant that produces multiple shoots directly from the large, flat tuber and tends to be a true trailer. It is impressive in a basket with its soft green foliage and scores of large rose tubular flowers appearing in profusion for several months.
- (4) *Sinningia* 'George Kalmbacher' X ('New Zealand' X ('Rex' X 'Pink Eumorpha')): This is a remarkably viable cross yielding vigorous seedlings. Germinates repeatedly in nine days in a heated terrarium. I intend to select small plants with dark foliage, self them and look for those with peloric blossoms. Limited in quantity.

Please feel free to write and request any of the above hybrid seed lots. If response is high, I fully expect to run out of most, so send your SASE early if you really want any of these. Also, I always have seed of Peg Belanger's *S.* 'Sillhouette' (F7) as well as pure *S.* 'New Zealand'.

Addendum

Ron Myhr (Box 245, Claremont, Ontario, Canada, L0H 1E0) has available seed of the following:

Sinningia eumorpha striped X self: The parent plant is a standard *eumorpha*, basically white with lavender shadings. However, there are nine exceptionally well defined purple stripes on the lower portions of the corolla. These plants may be useful in various breeding programs. Seed in good supply, viability unknown.

Sinningia eumorpha white X self: Parent is pure white, with some yellow in the throat. Flower is somewhat larger than on most eumorphas. Seed supply uncertain at this writing, but viability will be very good.

(*Sinningia eumorpha* X *S.* 'Pink Eumorpha') X self: Vigorous plants producing a range of blossom characteristics from pure pink to mainly lavender, with most being intermediate. Supply uncertain, viability is very good.

(*Streptocarpus johannis* X *S.* 'Wintermint') X self: 'Wintermint' is an exceptionally vigorous, beautiful and relatively compact plant with sparkling pale pink, almost white, flowers marked with maroon. *Johannis* has many small, white (sometimes pale lavender) flowers. Plants of the original cross were uniformly pale blue with some sparkle. A significant proportion of these seeds should produce plants with many small flowers in a range of colors held in clusters above the centre of the plant. Viability not yet known.

Send only a self-addressed envelope unless you have a Canadian 17¢ stamp - tape change to your letter and I will buy the stamp.

LET'S COMPILE A TABLE OF GROWING INFORMATION FOR GESNERIADS

Roger Strickland
Valley Center, CA

When I started hybridizing, I had had only minor experience growing gesneriads from seed. Thus I was unaware of many uncertainties that lay ahead. I was lucky, though, because I started with *Streptocarpella*, a subgenus that proved to be relatively simple to grow and select. *Streptocarpella* hybrids initially grow slowly, but they bloom while the plants are still small, in 4 to 6 months. Therefore, one can grow large numbers without taking up much space and still use flower characteristics as an early selection criterion. In fact, streptocarpellas are well suited for hobbyists to breed, because no unusual facilities are required. In many homes, streptocarpellas could be hybridized using only natural light for growing.

Subsequently I started hybridizing columneas. What a contrast with my streptocarpella experiences: my columnea seedlings kept getting bigger, and bigger, and bigger; yet I still did not see any buds. Eventually I learned that even "everbloomers" usually take 9 to 12 months (rarely only 7 months) before blooming. By that time, the columnea seedlings are usually huge.

Perhaps the G.H.A. members could compile a table of growing information useful to hybridizers starting to work with a genus unfamiliar to them. To get this project started, I have prepared a sample table for *Columnnea* and *Streptocarpella*. Undoubtedly the desired data are influenced somewhat by each individual's growing conditions, by the season, and by the particular cross. Nevertheless, even approximate information gives a starting point. Perhaps we can even get several reports for some genera so that we can see how much the data varies among individual growers. If data is not available for hybrids, then data for species of a genus would be useful. Can you add to this table?

SAMPLE TABLE. GROWING INFORMATION FOR GESNERIADS

Genus	pod ripening time	seeding mix	time to first flower	pot size at first flower	Suitable Culture			Source
					home	fluorescent lights	greenhouse	
<i>Columnnea</i>	3 - 4 months	prefer V* O.K. S-V-P**	7 - 12 months or more	4 in. large plant			X	Strickland
<i>Streptocarpella</i>	6 - 8 + weeks	prefer S-V-P poor. V	4 - 6 months	2 inch	X	X	X	Strickland

*V, #3 vermiculite (medium size); size #4 (fine) is too small

**S-V-P, milled sphagnum moss - vermiculite (size 3) - perlite (1:1:1 by volume) plus a wetting agent. Also has one teaspoon bone meal per 6 in. pot of mix, but it may not be necessary.

+Pods open suddenly, causing most seeds to drop out within a short time.

YELLOW *NEMATANTHUS* ANYONE?

Bill Saylor
Brewster, MA

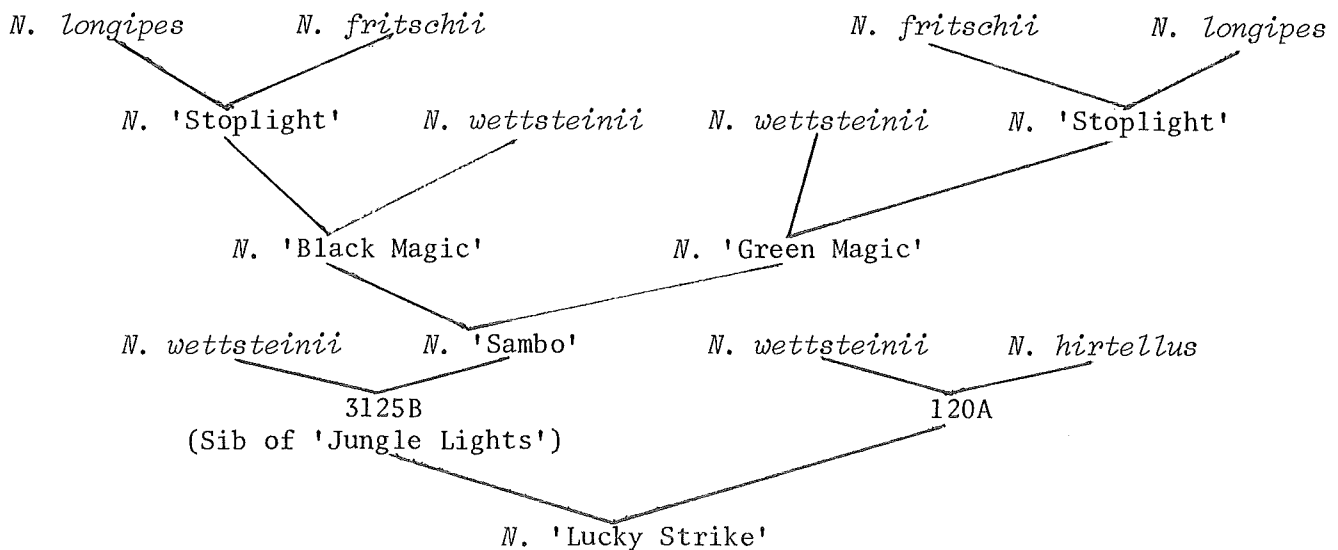
CrossWords Vol. 1 No. 4 carried an article (on Page 14) outlining some of my early frustrations in breeding for a good yellow *Nematanthus*. Effort has been continued in that direction using for the most part my red-orange flowered seedling 120A, a primary hybrid (*N. wettsteinii* X *N. hirtellus*) which of course carries all the genes for yellow from the pollen parent as well as all the desirable genes for floriferousness and compact habit inherent in *N. wettsteinii*. This seedling is a reluctant seed setter and so has been used exclusively as a pollen source. Pod parents have included 'Bambino', 'Castanet' and 'Green Magic' as well as a sibling (3125B) of 'Jungle Lights'.

Seedlings from the 'Castanet' cross have bloomed and have generally been disappointing in that the yellow has been partially to fully masked by reddish to peach tones which seem dominant. One lone seedling from this population is shaped just like 'Castanet' with a very deep maroon-purple calyx and a hairy canary yellow corolla tube. The limb is a pale rose. Habit is rather coarse upright with none of the attractive foliar markings of 'Castanet'. My goal has been and still is a plant like *N. wettsteinii* but with bright clear yellow flowers and waxy texture. The above seedling just did not even come close.

Then one day a real surprise showed up. I found a seedling from the 'Jungle Lights' sib and the (*N. wettsteinii* X *N. hirtellus*) cross in bud--and the color was pale yellow. Up to this time every evidence had been that the nematanthus genes for yellow from *N. hirtellus* were recessive. Yet 'Jungle Lights' and its siblings have in their background only *N. wettsteinii* and the two red-flowered species *N. longipes* and *N. fritschii*. The most recent cross introduced a single dose of the genes from the one additional species *N. hirtellus*. How then to explain the beautiful clear bright pale yellow of the flowers that materialized? I hope some day to figure this out. Suggestions will be welcome.

This first attractive yellow seedling will be named *Nematanthus* 'Lucky Strike'.

The pedigree can be shown thus:



The plant is compact spreading upright with opposite pairs of shiny green ovate leaves up to 35 mm long by 15 mm wide. In good light new growth shows attractive red venation and pigmentation. Internodes are usually under 15 mm long. The flowers are borne one to a leaf axil near the tips of stems. The

calyx, carried on a short pedicel, is light green with dark red tips to the lobes. The corolla is 25 mm long by about 8 mm at the most inflated part of the tube. The limb has a 7 mm spread. Color ranges from a spritely buttercup yellow in the limb through canary to a delicate mimosa at the base. 'Lucky Strike' has set seed and shows about 95% pollen stainability, so it fortunately should not be the end of the line.

'Lucky Strike' is generally healthy and strong. One reservation though-- it could be more floriferous. Breeding will continue with this goal in mind. There have also been a few instances where the very young tip growth has browned off forcing branching and delayed bloom. I am confident that this performance is the exception and may well be attributed to less than ideal growing conditions.

GLOSSARY FOR HYBRIDIZERS, PART IV

Vestiture and Texture

Frances N. Batcheller
Durham, N.H.

There are a number of terms used to describe the surface, margin and substance of plant parts and the *vestiture*, *indumentum*, or covering of the surface. Unless otherwise noted, examples apply to leaves.

The surface may be:

glabrous - smooth, without projections (*Achimenes glabrata*, *Codonanthe uleana*);
nitid - shining (*Saintpaulia nitida*);
viscid - sticky (*Heppiella viscida*);
rugose - wrinkled (*Conandron ramondiodes*);
bullate - blistered or puckered (*Nautilocalyx bullatus*);
pubescent - covered with hairs, a general term for hairiness;
striate - marked with longitudinal lines (*Gloxinia perennis*, stem);
lepidote - covered with scales like a butterfly wing (*Columnea lepidocaula*, stem);
verrucose - warty;
pulverulent - covered with loose powdery patches (*Gesneria pulverulenta*, bark)

The substance may be:

membranaceous - thin; *papyraceous* - papery; *coriaceous* - leathery; *succulent* - juicy, thick.

The margin may be:

ciliate (1) - fringed with hairs like an eyelash (*Codonanthe citrina*);
lacinate (2) - slashed into narrow pointed lobes (*Columnea gallicauda*, calyx);
pectinate (3) - comb-like, cut into very narrow close divisions (*Columnea*
 (*Trichantha*) *moorei*, calyx);
barbate - bearded, with tufts or lines of hairs (*Sinningia barbata*, corolla)

The indumentum may consist of:

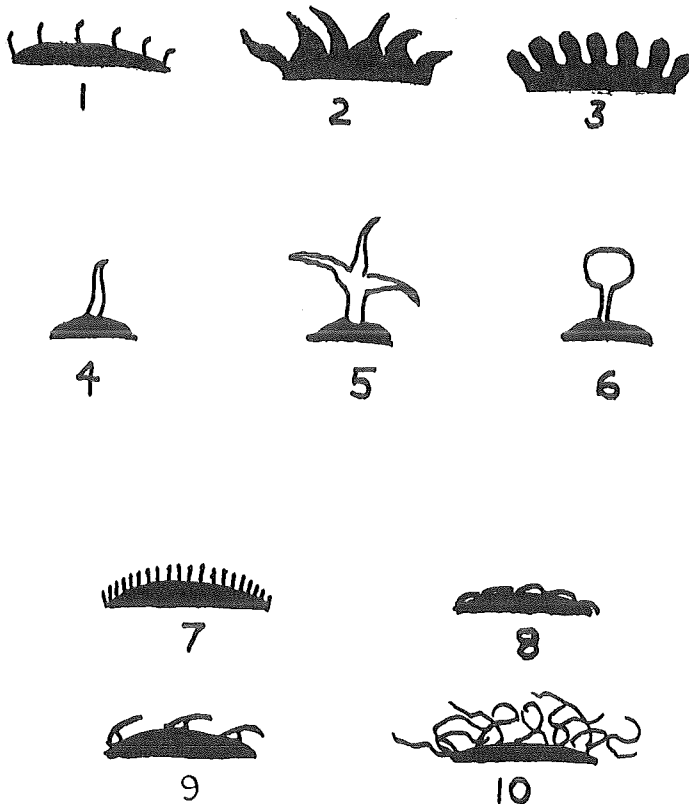
simple (4) - one or several-celled hairs;

stellate (5) - star-shaped hairs (*Rhynchoglossum notonianum*);

glandular (6) - hairs tipped with rounded sticky ends (*Gloxinia sylvatica*, corolla)

The covering may be dense (7) or sparse (9).

Trichome is a term for any surface projection, such as a hair, bristle, thorn, or gland.



Many terms are used to describe indumentum. These are a few that are more commonly used:

velutinous - velvety, short, straight, dense, erect hairs, pile-like (*Saintpaulia velutina*) (7);

hirsuta - short, erect, stiff, but not harsh hairs (*Columnea hirsutissima*, *Kohleria hirsuta*);

pilose - soft, long, rather straight hairs, not dense but somewhat shaggy (*Koellikeria erinoides*);

villosus - moderately dense, long, soft, weak, curly hairs, more shaggy than velvety (*Nautilocalyx villosus*);

sericeous (8) - silky, soft, straight, fine, appressed hairs, forming a satin-like sheath (*Sinningia canescens*) (*Cobananthus calochlamys*);

strigose (9) - stout, appressed, harsh, straight, stiff, bristle-like rigid hairs (*Diastema longiflorum*);

tomentose (10) - woolly, soft, matted, curled, appressed hairs (*Rhytidophyllum tomentosum*) (*Eucodonia ehrenbergii*)

HYBRIDIZING IN THE GENUS *EPISCIA*

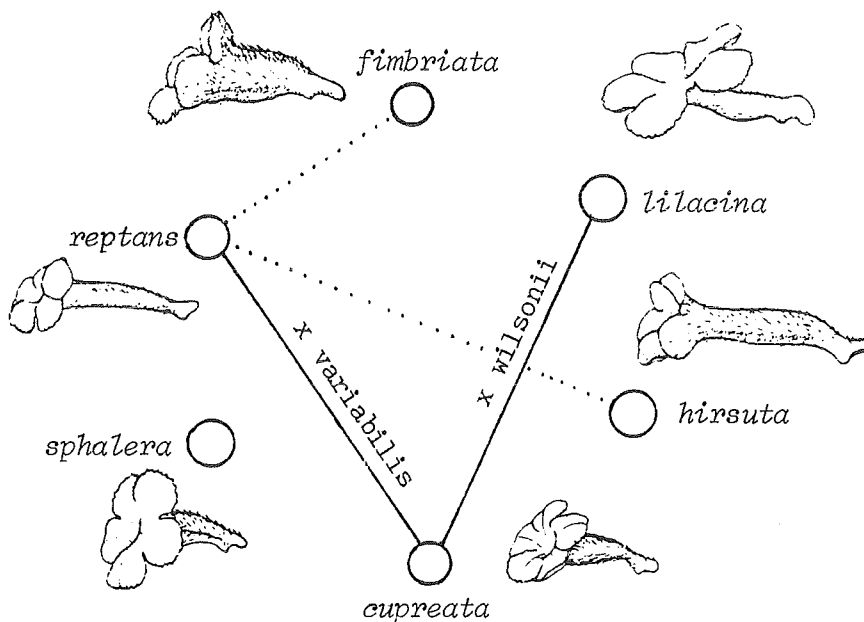
Hans Wiehler
Sarasota, FL

Portions of this article have appeared previously in Suncoast Gesneriette 2(10).

There are now only six species in *Episcia*, after the exclusion of *Alsobia*, *Paradrymonia*, and many species of *Nautilocalyx*. *Episcia* is now a genus characterized by two stolons per node (even though one may abort at times). All six species are terrestrials, that is they grow on the forest floor or on mossy rocks. The two species of *Alsobia* (formerly *Episcia dianthiflora* and *E. punctata*, with the hybrid *E. 'Cygnet'*) are epiphytes and have typically only one stolon per node. Despite numerous attempts by many since the mid-1950's, no hybrids have been produced between *Alsobia* and *Episcia*.

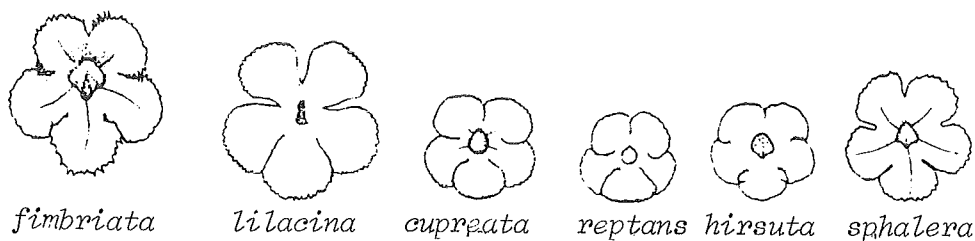
Episcia is an important genus in horticulture. The species and hybrids make attractive hanging baskets. The leaves are often variegated, and the flowers are showy: red, pink, yellow, and shades of lilac to pure white. Since it is so easy to hybridize episcias, there exist a large number of cultivars of hybrid origin, about 125 so far. Most of these are hybrids of *E. cupreata*. Can there be hybrids within one species? Yes, if there are differences, for instance in leaf variegation, within the same species. This happens to be the case with most species of *Episcia*. The collections from the wild of *E. cupreata* and *E. lilacina*, for instance, show a variety of color pattern in different geographical areas, or even in the same population, as in *E. cupreata* 'La Solidad Green' and 'La Solidad Bronze', both from near the village of La Solidad in Venezuela, growing side by side.

The accompanying diagram represents a crossing chart of *Episcia*. The solid lines between species indicate viable hybrids produced. The broken lines indicate offspring inviable, e.g. hybrid seed did not germinate. As you see, there is still much opportunity for hybridization and exploring relationships. There is, for instance, no cross between *E. reptans* and *E. lilacina*. Or try to grow the three



cultivars of *E. fimbriata*, and *E. hirsuta* and experiment with hybridization. The crosses between two pairs of species of *Episcia* have published hybrid names. Thus the proper name for a certain pink-flowered hybrid is *Episcia X wilsonii* 'Pinkissia'. I hope to introduce soon from Venezuela the only species of *Episcia* not yet in cultivation, the white-flowered *E. sphaera*.

If you look at the different shapes (and colors) of the six species of *Episcia*, any keen gesneriad grower and hybridizer should ask this question: What is the function of these different shapes and colors? The answer is simple. The various species have devised the different shapes and colors to attract a particular pollen transfer agent to effect cross-breeding. The red corollas of *Episcia cupreata* and *E. reptans* attract hummingbirds. The white corollas of *E. fimbriata*, *E. hirsuta*, and *E. sphaera* are geared for euglossine bees, and the blue corollas of *E. lilacina* with the narrow key-hole tube entrance are visited by butterflies. Three types of pollinators in one small genus. This is some necessary basic information for any serious hybridizer in the genus *Episcia*.



QUESTION

Bob Stewart
Stow, MA

How much correlation is there between pollen sterility, indicated by non-stainability, and pod sterility? That is, if the pollen of a hybrid will not stain, is it a waste of time to try and get seed from that plant using good pollen from another variety?

ANSWER

Ron Myhr
Claremont, Ontario

In my experience, some hybrids that are pollen sterile will accept pollen from other plants and produce seed. For some reason, though, I have found the opposite more often the case -- plants that are pod sterile often have pollen usable on other plants. Other people's experience may be different, and I would like to hear from them.

CrossWords is published quarterly by the Gesneriad Hybridizers Association, a non-profit organization established to facilitate the sharing of information about the hybridizing of gesneriads and to further the appreciation of the results of that hybridizing. Subscription is by membership. Membership fees are \$5.00 and applications, along with cheques, should be sent to Meg Stephenson at the address below, as should address changes and other subscription correspondence. Editorial correspondence may be sent to either of the editors. Editorial deadlines are January 1, April 1, July 1, and October 1 for publication two months later. All editorial content is copyright by the G.H.A.

Publication Committee

Coordinator: Peter Shalit
710 NE 43rd St.
Seattle, WA 98105

Printing and
Mailing:

Martin and Zelda Mines
2206 East 66th Street
Brooklyn, NY 11234

Editors: Ron Myhr
Claremont, Ontario
Canada L0H 1E0

Treasurer:

Peg Conner
319 Bay Avenue
Huntington, NY 11743

Anne Crowley
232 Austin Street
Hyde Park, MA 02136

Consultants:

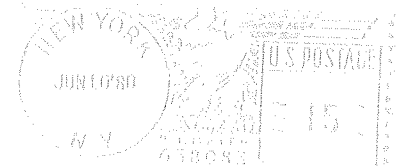
Peg and Art Belanger
140 Howie Avenue
Warwick, RI 02888

Membership: Meg Stephenson
1415 Goldsmith
Plymouth, MI 48170

Seed Fund:

David Zaitlin
2903 N. Mountain Avenue
Tucson, AZ 85719

G.H.A.
1415 Goldsmith
Plymouth, MI
48170



FIRST CLASS

The Arnold Arboretum Library
The Arborway
Jamaica Plain, Ma. 02130