CROSSWORDS

THE GESNERIAD HYBRIDIZERS ASSOCIATION

NEWSLETTER

VOLUME NUMBER 1 ISSUE NUMBER 3 FALL 1977

DIRECTOR'S MESSAGE

"We think a newsletter dedicated to publishing gesneriad hybridizers successes and problems would be enjoyable for all." This bit of idealism was written last spring in all sincerity and at that time our main concern was whether or not we could find 50 people who might share that thought.

We honestly felt we would have a group of enthusiastic members vying for the opportunity to share their problems and to tell about their newest hybrid, not to mention the obvious chance to publish their claim by a public announcement of the new hybrid.

Back to the world of reality: The members who have the knowledge and experience to answer the questions posed in the Newsletter or write a feature article are evidently too busy to be bothered. (Lest we offend the people who helped the most, we must say there were a few outstanding exceptions to this statement.) We have received many promises, but few articles.

The most embarrassing part of the whole situation is that in this issue, with 200+ paid up members, there are 6 pieces written by Peg or myself, not hogging space but attempting to fill the 15 page format. A NEWSLETTER devoid of news relative to its proclaimed purpose is on shaky ground. We are not authors, we are amateur hybridizers willing to share our limited knowledge and hoping in the exchange to learn from others.

WE DESPERATELY NEED ARTICLES FROM SUCCESSFUL HYBRIDIZERS TO SHARE WITH THE MEMBERS.

At this writing the cupboard is bare, there are no articles in reserve for the winter issue. We are written out, and the issue shapes up as a printed list of members and their preferred genera. (Only one third of the membership even bothered to send in their preferences.) After such a good start it would be a sad thing if CROSSWORDS were to fade away for the lack of feature articles from the experienced and lack of feedback from the members. Help fill the winter issue if you have enjoyed the past issues as we do not plan to publish blank pages in 1978.

Art Belanger

Director, G.H.A.

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GESNERIAD HYBRIDS-FROM THE COMMERCIAL VIEWPOINT.

VINCENT FLANDERS...JUST PLANTS
P.O. Box 26193
Indianapolis, IN 46226.

I talked with Art Belanger and he asked me to drop him a few lines about what a commercial grower was looking for in new hybrids. Of course, what every grower is looking for is a plant that has commercial potential and I would like to mention several factors that I believe to be universal requirements for any new hybrids:

1. Ease of propagation--if the plant is propagated from seed then the seed must breed true. If the plant is propagated vegetatively then it must be a fast growing plant that will root quickly.
2. Ease of culture--there must be no strange cultural requirements that would be hard for the average grower to duplicate. e.g. The plant needs cool temperatures to bloom, needs 90% humidity or there is a tendency for the leaf tips/edges to brown, etc.
3. Attractive habit--The plant must not be 'gangly'; the pairs of leaves should be closely spaced. The plant should not be 'huge'; or if so, must be easy to keep stocky. For example, kohlerias are notorious for being gangly growers as are most varieties of Nematanthus unless you pinch them or keep them pruned.
4. Distinctiveness: Hopefully the plant will be sufficiently distinct from another plant already in cultivation. Who needs two Columnea 'Early Birds'? This is why the Hybridizers' Association is so important. If you know somebody is crossing C. 'Fang' with C. erythrophaea (this gave us C. 'Bonfire'), then you might not try the same cross. Of course, if you tried the same cross, you might get something completely different, but the odds are you will merely get a variation on a theme.
5. Improvement: Is this plant an improvement on what is currently available? An everblooming C. 'Cayugan' or a pendulous and more compact C. 'Chanticleer' would certainly be an improvement.

If your hybrid meets these requirements then you've got a plant that has true commercial potential. Whether the plant is erect or trailing; the flower is red or yellow is of minor importance compared to the above list of requirements.

One thing that bothers me is that the commercial growers seem to be taking advantage of the amateur hybridizers. This may seem to be a strange attitude for a commercial grower to take but I believe myself to be a rational human being who feels that a person should not give something to someone without receiving something in return. I don't know if Bill Saylor received any financial renumeration for his hybrids but think of the thousands of them that have been reproduced! I would like to propose that all hybridizers be rewarded in the same manner as the person who owns the rights to the Rhapsodie and Ballet series of African Violets. For each plant that is sold there is a royalty payment made (5¢ per plant). Of course, these plants are patented so that it is illegal to reproduce these plants by vegetative means.

(cont.)

FLANDERS (cont.)

Since it would be too expensive to patent every new gesneriad I propose the following system of payment:

Joe X calls me up and says "I have an everblooming red Columnea and it meets all of your requirements." I say "Fine! If you let me be the exclusive distributor for the plant I'll give you X¢ per plant (price to be worked out) for each one I sell the first year that I offer the plant and I'll give you Y¢ which is (less than X¢) for each one sold the next year. I will also give you credit in the catalog for being the hybridizer. After the second year I won't pay any royalties since, by that time, if the plant is as good as you say it is other commercial growers will have purchased enough of the plant from me so that they will be selling it."

Obviously, the hybridizer will not receive the same total amount of money as the person who hybridized the Ballet series of Violets but at least he will receive something. After all, the hybridizers don't owe it to the commercial growers to give them their plants. If there is a commercial grower who feels this is unfair I would love for him to rationally explain his thinking to me. In the meantime I'm sure the hybridizers will be coming to me since I'll be glad to try and work something out with them.

WHAT WE ARE LOOKING FOR

Aeschynanthus--Of course, like everyone else, we are looking for a truly everblooming Aeschynanthus. It would be great if it were compact and bloom up and down the stem.

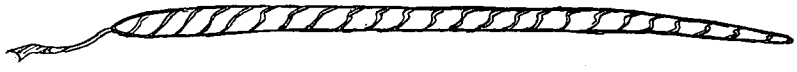
Columnea--We are looking for plants that meet our five requirements. We would love to get an everblooming red Columnea. We like erect Columneas that would be good for windowsills and light gardens.

Nematanthus--We are looking for a small, compact, quick growing and florifeous variety.

Episcia--Hard to say. Something "different" and I would love a variety that didn't need much humidity.

We are not really looking for too many other varieties but if something came along that tickled our fancy like an interesting Gesneria or Nautilocalyx or miniature Sinnigia hybrids we could always become interested.

Finally, we feel it would be a help to everyone if seed and pollen parent were included in the plant catalogues or lists along with the name of the hybridizer whenever these facts are available.



QUESTIONS I WISH SOMEONE ELSE WOULD ASK.
Answers by A&P, Warwick, R.I.

NOTE: QUESTIONS I WISH SOMEONE ELSE WOULD ASK- will be listed under ??????????- complete with answers throughout the Newsletter.

BARB AND KEN MERWIN...BOMBADIL'S
2126 E. Locust, Milwaukee, WI 53211

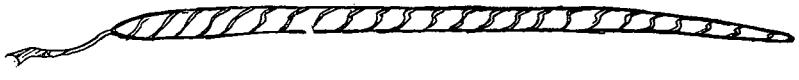
We are very interested in receiving any new introductions that other hybridizers have developed. Since we started our mail order business we have seen a real need to get these introduced, since we are getting a lot of inquiries specifically about new hybrids.

We will be introducing some new Saintpaulia hybrids next year and hopefully some new Sinningias (miniature). We are also looking for new Episcia and Columnea hybrids, as we've been doing a lot of business in these. (Far beyond our expectations for our first year). We would also be happy to receive new hybrids from hybridizers who would like a second opinion before they release them.

The idea of pollen exchanging is great as one of the frustrations of hybridizing is that of not having enough plants coming in to bloom in time to produce pollen. We've been storing pollen now until we have a good female candidate but would like to get a lot more crosses going.

One suggestion would be for a higher membership fee for us commercials since we theoretically derive economic benefit and should be in a position to pay more. I would not want to put my neck on the chopping block on this, however we would be willing to pay more. To this end I am enclosing $10.00 to help defray your expense of doing CROSSWORDS.

One additional comment about hybrids. From a commercial standpoint there is probably a tendency to want only those hybrids that are easy, free flowering, and easy to propagate. However, we also see the need for and want the more difficult hybrids. Episcia 'Cleopatra' is a good example- it's difficult and costs more than many of the other varieties-but the public sure wants it even when told that it's difficult and expensive. The plant buying person (serious that is) oftentimes wants the challenge of the difficult plant. Of course, the commercial has the responsibility to inform their customers of the plants difficulty or special nuances such as terrarium only etc. We have quite a few customers that want to take the risk with the more difficult plants.



JUDY BECKER . . . LAURAY OF SALISBURY
Undermountain Road (route 41)
Salisbury, Conn. 06068

June is a busy month so I am only now getting around to writing. I have enjoyed the first two newsletters and hope that it continues. My hybridizing efforts are few and seem to go in sporadic bursts of work. Usually none in summer as I tend to get busy and forget to go back and pollinate at the right time.

As a commercial grower what I look for in new hybrids is a plant different enough from other available varieties. Since this cannot always mean completely different flower color, it could include different foilage, plant habit, or blooming. Greater tolerance of non-greenhouse growing conditions, and no particular susceptibility to insects or disease. I think that it is a little too much to expect disease or insect resistance at this stage. Also, can be propagated with reasonable ease.

So, the ideal plant would grow and bloom no matter what and that sounds almost like the definition of a weed.

GARY K. HUNTER, grower . . . HUNTER'S GREENHOUSE
R. D. 1 Box 2a
Drumore, Pa. 17518

I am excited about the Gesneriad Hybridizers Association. Amateur (non-paid) plant breeders have produced many superior plants through their dedication. The GHA newsletter will help produce new exciting plants through exchange of ideas.

The question for viewpoint was, "What is a commercial grower looking for in new hybrids?" As an amateur hybridizer myself, I have some views on that but first I'd like to discuss "How to choose a new crop for commercial production." Most growers I know like plants but what they like and what they produce are usually different. They produce those crops that are profitable, that can be produced under their growing conditions and that are saleable in their particular market. Both the Poinsettia and Sinningia cardinalis are red and green, but 15 million Poinsettias were grown in '76 and S. cardinalis remained anonymous. Of course Poinsettia has tradition and national promotion behind it, but then S. cardinalis could too if anyone was interested. How about making it the traditional Valentine plant? It already has the heart shaped leaves and red flowers. Now add a catchy name and a lovers legend and you might sell a few. Plant purists may shudder at this commercialization of one of our beloved Gesneriads but it's not enough to be a neat plant to be produced.

Some of the general requirements which I've observed for a crop are toughness, schedulability, marketability. Toughness leads the list because the plants have to survive much impersonal abuse before it gets to the final consumer. It must grow under a wide range of conditions, it must be compact so that it can be handled easily from greenhouse to store, the flowers must hang on, it must hold up well in a retail store where it will be abused.

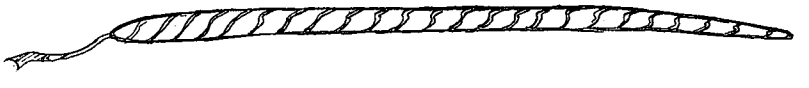
Schedulability is the key to a multi-crop grower. He wants to be 95% sure that the crop will finish in a given amount of time. He wants it to finish in 12 weeks or less for a fast turn over. It must fit into normal greenhouse production methods. A hidden kicker is whether stock is available to produce the plant on a large scale.

Marketability is basically having the right plant at the right place at the right time at the right price. Can the plant be grown at a close greenhouse spacing that allows it to compete with other existing commonly grown plants? Is the plant saleable in a number of forms, e.g., a pot plant, in baskets, as rooted cuttings, as a large specimen plant?

I like Gesneriads and have grown most of them that are available, however very few can pass the above test for toughness, schedulability and marketability. In my business I've tried to bridge the gap between the hobbyist and the commercial grower.

I've started with *Streptocarpus* and have set up a system to propagate the 'Nymph' type to sell to other growers. We hope to add *Nematanthus* to sales soon. There are a few other Gesneriads that can become commonly grown plants, too, but it is not an easy process.

To close I'd like to quote in part from the policy statement of the Society of American Florists' Breeders Committee. "Plant breeders must meet the challenges of fuel conservation, air pollution, faster growing and faster flowering plants, plant forms that fit modern home environments and plants that are more disease resistant and insect resistant." It seems there's more to choosing hybrids than first appears.

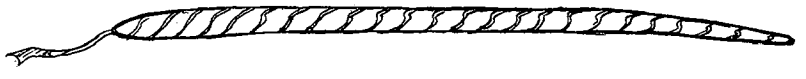


A bit of information which may make it easier for those who are following Peter Shalit's suggestions for a primary cross of the mini-species Sinningias: try keeping the pollen from several S. pusilla plants for a day or two on note paper so that it will be powdery when it is used on the emasculated S. 'Snowflake' stigma.

Hybrids of Frances N. Batcheller
Durham, N.H.

xAchimenantha 'Kuan Yin'	Reg.#6111	Achimenes longiflora x Smithiantha zebrina
xAchimenantha 'Tammuz'	Reg.#66089	Achimenes mexicana x Smithantha 'Carmel'
Achimenes 'Isis'	Reg.#66088	Achimenes andrieuxii x A. dulcis
Gloxinia 'Turan'	Reg.#76144	G. sylvatica x G. lindeniana
Gloxinia 'Medusa'	Reg.#76143	G. sylvatica x G. gymnostoma
xHeppimenes 'Tezli'		Heppiella viscida x Achimenes dulcis
Kohleria 'Rongo'	Reg.#64054	Kohleria amabilis x K. 'Sciadotydea hybrid'
Kohleria 'Kapo'		K. 'Longwood' x K. 'Scidotydea hybrid'
Kohleria 'Pamola'		K. amabilis x K. longifolia
Kohleria 'Modron'		(K. eriantha x K. amabilis) x amabilis
Sinningia 'Ramadeva'	Reg.#73127	S. pusilla x S. canescens *
Sinningia 'Yarilo'	Reg.#76145	S. 'Ramadeva' x S. tubiflora
Sinningia 'Krishna'	Reg.#73125	Tetraploid of S. 'Ramadeva'
Sinningia 'Kore'	Reg.#73124	S. 'Ramadeva' x S. richii
Sinningia 'Benten'	Reg.#73125	S. 'Ramadeva' x S. barbata
Sinningia 'Oengus'	Reg.#73126	(S. concinna x S. schiffneri) x S. 'Krishna'
Sinningia 'Merlin hybrids'		S. pusilla, S. eumorpha, S. canescens, S. cardinalis
Sinningia 'Erda'		S. eumorpha x S. canescens

* differs from the one listed in the Sinningia Register because the Registrar was supplied with incorrect information by the hybridizer



INTERSPECIFIC CROSS RECORD

Dr. Clayberg suggested that members list a record of primary crosses for publication in CROSSWORDS. Keep in mind that there is room for error when dealing with pollen. The best test of the success of a cross between any two gesneriads is that the f1 generation of an interspecific cross will usually show half the visible characteristics of the two parents, as gesneriads generally exhibit incomplete dominance.

So if you have an interspecific hybrid, report it to us. Don't worry about it being the first of its kind. We will publish them all for the benefit of the whole group. We need the name of the seed parent x the pollen parent, whether fertile or sterile, and the name of the hybridizer. As usual we will list some of our own species crosses as an example of how your contributions will be handled.

SEED PARENT	POLLEN PARENT	FERTILE	STERILE	HYBRIDIZER
Sinningia tubiflora x S. aggregata		x		Belanger
Sinningia concinna x S. claybergiana		x		Belanger
Sinningia eumorpha x S. richii		x		Belanger
Sinningia cardinalis x S. canescens		x		Belanger
Gesneria reticulata x G. pumila			x	Belanger

Some f1 hybrids are only pollen sterile and should be so noted. Try to self pollinate more than 50 times before reporting sterility.

THE G.H.A. AT MINNEAPOLIS
Lee Linnett, Convention Secretary, Clinton, Md.

The first meeting of the Gesneriad Hybridizers Association was called to order at 10:30 p.m. in room 405 of the Sheraton-Ritz Hotel Minneapolis, Minnesota, on June 30, 1977. Art and Peg Belanger of Warwick, R.I., the founders and organizers of G.H.A., presided. There were 48 people present.

A membership in G.H.A. of 170 was reported by Art Belanger with over 90% also members of A.G.G.S. A discussion concerning membership followed, and Art said one of his goals was to get more westerners interested in G.H.A. It was noted that several western as well as Canadian members attended the meeting.

Isla Montogomery of Colorado suggested a standard color chart for members. Mr. Belanger said the address of The Royal Horticultural Society of England (RHS) would be in the next issue of CROSSWORDS. The R.H.S. has a color chart available for 6.35 pounds (exchange rate about $1.70).

A general discussion of hybridizing ensued, and Dr. Carl Clayberg pointed out that just getting started in hybridizing is one of the biggest problems. Dr. Clayberg also stated that reports sent to CROSSWORDS of interspecific crosses and whether these crosses were fertile or not would provide useful information to hybridizers. He suggested that beginners stick to a few genera and said that perhaps hybridizers could distribute seed of their crosses to others through a notice in CROSSWORDS . . . Peg Belanger mentioned that Bev Van Ess of Dayton, Ohio, had already started a similar program.

In a discussion of *Saintpaulia* hybridizing, Peter Shalit suggested an article dealing with hybridizing to get plants with specific characteristics. Dr. Clayberg noted that in *Saintpaulia* and *Sinningia speciosa,* too many plants are selected for unstable genes. Diantha Buell added that an article by Lyndon Lyon who gained much information from his work on *Saintpaulia* would most likely be the answer to Peter's suggestion. Diantha further suggested the interview be taped, and Ruth Webster volunteered to visit Lyon's in the fall.

Peter Shalit suggested there be a person to solicit articles for CROSSWORDS, to which there was no response. Patrick Worley said he would like to have *Smithiantha* information. Ruth Webster would like to have the question and answer column continue as is. Judy Becker thought it would be better to have the answer in the same issue for continuity and would also like information on crosses that are not successful.

Lucille Kaytis would like to see chromosome counts published in CROSSWORDS; Henry Peterson said that Dave Masterson's book contained such information. A not yet released publication by Dr. R.T. Bingham would also contain this information.

In conclusion, Art Belanger said that CROSSWORDS is printed on a 23x35 sheet which cuts up into 15 pages plus mailer, and left us with the thought that it is up to us to fill it.

The meeting was adjourned at 11:35 p.m.

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How does one go about gathering and storing pollen?

Cut off the anthers (See illustration issue 2, CROSSWORDS). Catch the anthers on some dark paper and allow it to dry. Fold the paper with the pollen and anthers inside, label it, and put it in a screw top container. Include some dessicant if you wish, this will keep you in business for a few months, if you manage to keep the pollen dry. To store pollen for a year or so freeze it after it dries.

What happens when you use *Sinningia pusilla* as the female parent? The first generation looks like *pusilla* as often as not and *S. pusilla* characteristics carry on down the generations. Would you call this dominance?

Only the most careful and early emasculation will prevent S pusilla from selfing. In this case wait at least two days before applying foreign pollen and make certain the corolla is still firmly attached. We would suspect self pollination rather than dominance when the f1 progeny look like pusilla, because they should show a melding of the characteristics of the seed and pollen parents.

QUESTIONS FROM INTERESTED MEMBERS

Joni Hurley . . . Pittsburg, PA.

Over the past couple of years I have been trying to cross any of my 45 *Sinningia speciosa.* Anytime any of them would bloom the mad pollinator would go to work. After all my attempts, only one ever set seeds and it selfed. I have read that the best time is after the flower has been open about three days, so tried then, this also failed.

Suddenly an idea hit me. I had noticed that most of the *S. speciosa* had a slight fragrance some time after the flowers were open. Then I thought, the purpose of fragrance is to attract insects for pollination. So I waited for the fragrance and then cross-pollinated. This time 4 out of 7 crosses resulted in seeds. Some of the failures were probably due to the fact that only one parent flower was fragrant at the time of the cross. With one pair of plants I made a reciprocal cross, hoping that at least one would set the desired seeds. Well, both flowers were fragrant, and both set seeds.

Has anyone else tried experimenting with fragrance in regard to pollination of *Sinningia speciosa?* I would be very interested in hearing about the results.

Jeff Ross . . . Old Bridge, NJ.

Last summer I crossed *Achimines* 'Yellow Beauty' with *Smithiantha* 'Little Yellow'. I thought they had similar chromosome numbers. Although the pods on *S.* 'Little Yellow' aged and ripened, there were no seeds, even after four months. What causes this?

Peg Belanger . . . Warwick, RI.

Has anyone successfully crossed *Sinningia hirsuta* with any of the other Sinningia species? I know it was done with *S. concinna,* but what about with another larger *Sinningia?*

Russell White . . . Latham, NY.

Has anyone tried hybridization with *Saintpaulia* and *Streptocarpus* Sub Genus, *Streptocarpella?* Both have similar habits, both have similar leaf surfaces and only slightly different temperature habits. Both have chromosome number n=15.

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What is meant by a pedigreed seed line?

Perhaps it would be more accurate to describe the seedline as "true to seed". Self pollinating reduces the number of heterozygous genes in half by each generation. By the sixth generation 95% of these genes are expected to be homozygous. Such plants are known as inbred or pure lines. (Pedigreed means "of known lineage", and was possibly used too loosely by us in this case.)

Will the corolla of a Sinningia slip off easily from a cross, or is this just an indication that the plant selfed?

Both, this is why we recommend a short waiting period after emasculation, to make certain that there has not been an inadvertant selfing.

What is meant by the term, "offered commercially"?

When a plant is offered commercially, it is listed in a list or catalogue. When this list is published, the plant is said to be introduced.

What are the general requirements to register a plant?

This information is included on the registration blanks, available from the International Registrar, Mr. Paul Arnold, 26 Hotchkiss St., Binghampton, NY. 13903

'77 A.G.G.S. CONVENTION REPORT, (from the G.H.A. viewpoint)
Peg Belanger, Warwick, R.I.

If statistics mean something, the convention was certainly a successful one for the G.H.A. Over 30% of the G.H.A. membership was present, and formed an equal percentage of the total attendance at the Minneapolis get-together. It would appear that the more active members of the G.H.A. are also the most interested members of the American Gloxinia and Gesneriad Society.

Dr. Clayberg's workshops for beginners and advanced hybridizers were both over-subscribed by eager students of both catagories who were left actually begging for more information at the conclusion of the lectures. Dr. Clayberg has agreed to answer questions from the members in the Newsletter, if they are sent to CROSSWORDS, NOT sent to him.

More statistics: 26 of 39 possible awards were won by G.H.A. members, including:
BEST GESNERIAD IN SHOW (Alice Schwartz, with *Boea Hygroscopica.*)
SWEEPSTAKES (Jessie Crisafulli, for 8 blues in horticulture, 4 blues in design)
SILVER MEDAL FROM AMERICAN HORTICULTURE SOCIETY FOR WINNING 8 BLUE MEDALS IN ONE SHOW (Jessie Crisafulli)

The first informal meeting of G.H.A. was also a successful occasion, even though not too comfortable for the latecomers who filled the room to the point of overflow. To the people who were sitting on the window sills and floor: next year, Erica Jayson has promised better accommodations, as we will be better prepared for the number of members who will attend. Many of the people who merely "looked in" at the meeting out of curiosity, became interested enough to join at its end.

The camaradarie of a Convention can be likened to the feeling one has while attending a re-union of any type, and each year as it comes to a close, instead of feeling sad about the ending of a most enjoyable time, I am already looking forward to the next Convention, when it will all happen again, same people, different place, another year.

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How do you self pollinate a pink or yellow flowering *Episcia?* Do all *Episcias* have pollen that ripens before the same plant can be fertilized? How do you self pollinate an *Episcia* bloom then?

If the problem is simply a matter of timing, take the pollen from a blossom when it is mature, and save it to apply on the next blossom. Self pollination refers to the plant, not necessarily to a particular blossom.

How many fl's should I grow from a crossing?

If you are crossing two species, five of the most rugged plants are sufficient to insure the ability to go to f2 where you have the most differences to select from. A cross of two hybrids will normally give a wider choice of plants at fl so you could grow a larger number.

I really enjoy growing the compact *Sinningias* and I like *S.* 'Rex'. How was this plant hybridized?

Lyndon Lyon started toward *S.* 'Rex' by selecting the smallest of large populations of *Sinningias.* He combined these with one called *S.* 'Penside' which had a more vibrant color. *S.* 'Penside' was hybridized by Ted Bona and sent to Lyndon. The resultant strain was called *S.* 'Rex', not yet *true to seed* but in the process.

Is there a listing somewhere of the property of dominance in gesneriads?

We know of no such list. Gesneriads are said to exhibit incomplete dominance.

REPORT ON ADVANCED HYBRIDIZING WORKSHOP — A.G.G.S. convention, 1977

Art Belanger, Warwick, R.I.

The lecture by Dr. Carl Clayberg of Kansas State University, on WIDE CROSSES was squeezed into an incredibly short period of time. I will attempt to relay the information as accurately as possible.

"We are now venturing into an unproven area of gesneriad hybridizing. The following methods to facilitate wide crosses are merely suggestions, your procedures will be your own."

1. Recognition pollen. Mix male parent pollen with killed self-pollen. Kill pollen by:
   a. methyl alcohol. Immerse self pollen in a small amount of wood alcohol for 2.00 minutes. Reclaim pollen by pouring through black filter paper.
   b. Age. A slow process requiring testing of the killed pollen to be sure it is no longer viable.
   c. Freeze and thaw repeatedly, same problem as b.

2. Immunosuppressants. Supress rejection of foreign pollen, as in animal organ surgical transplantation.

   Use E-amino-n-caproic acid. Available from Sigma Chemical Co., P.O. Box 14508, St. Louis, MO 63178. (25 grams for 2.25). Treatment: Spray to runoff every day with solution 1 gram/liter concentration, or less. Mix in tap water and store in refrigerator. Some hybridists are mixing Gibberelic acid 75 ppm or 2-4-d 100 ppm in with the E-ammino acid.

   Disciples of this method have found the chemical to be most useful in crosses that continually produce sterile seed. These crosses produce a few viable seed from treated plants.

3. Pollinate first with a small amount of self pollen, followed by a large amount of male parent pollen. (Check seedlings for evidence of male parent to verify cross.)

4. Cut off style, put a drop of Easter lily exudate on stub, then pollinate.

   Sometime it is necessary to apply the pollen of a plant with a short style on a plant with a long style. By cutting the long style down to the size of the smaller pollen parent, we make it possible for the pollen to reach the ovary of the larger plant.

   (This one interested us immensely, as we remembered that most of our Sinningias produce an exudate around the glands, about the time the corolla slips off. We tried *Sinningia* exudate on a large plant and used pollen from *S.* 'Snowflake' on the cut off style. We now have several pods forming but it is too soon to tell about the results.)

5. Graft the female parent on the male parent, then cross.

   This way we have recognition by sap flow. In my opinion the easiest method of grafting gesneriads is to use the "approach graft". Plant both subjects in the same pot for ease of binding together. Scrape each plant and bind together with strips cut from a plastic bag. After the graft is united, the root system can be cut off the female plant. This procedure is involved but could be useful on very difficult crosses.

Added help for germinating seeds from wide crosses: *

If you get twisted or malformed seeds from any of the foregoing methods, don't discard them, test for germination this way. Put laboratory filter paper in the bottom half of Petrie dishes, dampen the paper and sow your seeds. Stand the dishes on their side, vertically, immersed in about ½ inch of water. For a small operation the ideal container would be a plastic bread box, loaf size, with a transparent top. The water will feed up by capillary action and keep the filter paper wet. The seeds should be sown on the top half of the filter to keep them out of the water reservoir. When you observe germination prick out the new seedlings and plant in a seedling mix.

*Supplies for this set-up available from Carolina Biological Supply Co., Burlington, N.C. 27215.

NOTES FROM MEMBERS.

Ruth Pavlovich, Magnolia, NJ.

We are reading the newsletter, every word, often. Also re-reading textbooks for basics and compiling reading lists. Have a few local people meeting on a come if you can basis, every Wednesday evening.

I am keeping a notebook outline (undergraduate style) for future reference and with a view to bringing absentees up to date. Thanks for your interest in the endeavors of enthusiastic neophytes like me.

Timothy Ross, Walled Lake, MI.

I've taken a fancy to the flowers of *Paradrymonia ciliosa* and would like at least one plant, but according to the Elberts in their gesneriad book, "*Paradrymonia* is not being actively cultivated or hybridized." Since the accompanying photo was Frances Batchellers' I thought perhaps she would have a plant in her private collection and could spare a few seeds. If not would there be any other place where I could obtain seed?

I've been wondering whether a cross between *Gloxinia lindeniana* and an *Achimenes,* such as species *A. erecta* would be possible? Or has it already been attempted? Within the next year will you be having a specialized article on breeding *Achimenes*? This is the point I would be most interested in and I'd like to get some professional tips on breeding them before I start.

P.S. If anyone in the A.G.G.S. or G.H.A. ever plans a field trip to South Eastern Brazil please notify me. I've lived there 8 years (I'm 15) and am quite familiar with things. I could run up and down the trees gathering epiphytic gesneriads, besides helping with the language.

tchau!

William Guyette, Clinton, NY.

I would like to see an article on color inheritance and double flowered mini-*Sinningia* production.

The foregoing letters show the desire on the part of our members to learn. There are numerous other requests for articles from people with some experience. Some people have offered to help out in the production of CROSSWORDS. There is an obvious need for someone to solicit articles for future issues. (ed.)

AESCHYNANTHUS 'RED CASCADE' . . . an improvement over both parent plants.
A&P, Warwick, R.I.

Here is an *Aeschynanthus,* a target of excellence for all hybridizers. *A.* 'Red Cascade' is an unbelievable f1 hybrid. It grows very vigorously, and we believe it is the heaviest blooming Aeschynanthus hybrid yet. The name is appropriate, as the red blossoms, a little smaller but similar to *A. pulcher,* cascade down the plant. Here is the point where *A.* 'Red Cascade' departs from the ordinary pulcher-type blooming habit, because it has the usual terminal hand-like blossom cluster, but it has them at nearly every axil to practically cover the plant. Plus, the bloom is recurrent. This plant should take show honors at any time of the year, since it is usually blooming. The foliage is a pleasant blend of the parents, which gives it a more dainty appearance than *A. pulcher,* but it looks a bit more rugged than *A. micranthus.*

Yes, *A. pulcher* x *A. micranthus* was the cross made by Bill Saylor. In fact it was the second *Aeschynanthus* cross ever made by Bill. He selected 'Red Cascade' for naming from a group of 15 f1 seedlings, "because of its free flowering tendencies." Mike Kartuz introduced it when he listed it in his 1976 catalogue.

In New England this plant can be grown in a South window with little or no protection. Though it will grow and bloom satisfactorily under lights, the higher 2000 to 3000 footcandles of diffused sunlight really bring out the RED CASCADE.

ENSTAR 5E . . . it works.
A&P, Warwick, R.I.

Enstar 5E is a new insect growth regulator for the control of whiteflies and aphids in greenhouses on ornamental plants and vegetable seed crops. Enstar does not produce an immediate insect kill, but rather, it interferes with the normal process of insect development.

Heavy infestations require treatment 7 days apart at the rate of 1 tsp./gal. for two applications. Then switch to a prevention program of ½ tsp./gal. every two weeks. Obviously it is poisonous. Use care and protective clothing when spraying.

This product was first brought to our attention by Mel Sater's article in the GLOXINIAN* It is available from E. C. Geiger Co., Box 285, Harleysville, PA 19438. Price at 2/11/77 for 1 pint of Enstar 5E was $36.00, plus shipping.

It works . . . White fly and aphids slowly disappear, if 4 weeks can be called slow. We had been fighting a particularly hardy white fly with synthetic pyrethium for over two years without success. Our species of white fly is a hybrid between a Cape Cod variant noted for hardiness, and a super-fast propagating R.I. species. Our aphids miraculously appear whenever the *Aeschynanthus* bloom. One two-week program of Enstar and a white fly moving around is rare. The aphids completely disappear.

On a fairly complete gamut of gesneriads, spray damage was slight if any. The discolorations observed could have been caused by winter drafts. We were surprised that it did not hurt the blossoms that were open. It is refreshing to buy a product that does all that its manufacturer claims.

*T.G. NOV/DEC 1976

FERTILE POLLEN?

Bill Saylor says, "When a new hybrid blooms and you wonder if the pollen is fertile, why not check it for stainability? Just put a drop or two of aceto-carmine or aniline-blue stain on a microscope slide, stir in a tiny bit of pollen, put on a cover glass, and examine at about 50x magnification. Good pollen grains will take up the stain and stand out bright, round and clear, while infertile grains will look like empty shells. Fertile pollen will stain 70 to 100% and poor pollen will show zero to just a trace. In between you may encounter examples with around 50% stainability. Sometimes, particularly among miniature Sinningias, you will encounter mixtures of large and small pollen grains, indicating that both diploid (small) and tetraploid (large) gametes are present."

*See footnote pg. 10

POLLEN WANTED . . . Otto Richter, 8 John St., Freehold, NJ 07728.

I would be interested in obtaining pollen from *Sinningia tubiflora,* any *Gesneria* except *G. cunefolia* and any *Nautilocalyx* except *N. melittifolius* . . .

A plant or seed exchange would be welcome. I have a hybrid of *Episcia* 'Pink Brocade' which was crossed with one of my unnamed seedlings. It carries the coloring similar to *E.* 'Pink Brocade' but it does well outside of a humid atmosphere. I have cuttings available.

Note — Beverly Van Ess, 36 E. Burton Ave., Dayton OH 45405 is offering hybrid seed to interested people.

??????????

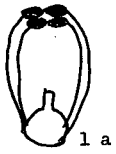
How does one go about gathering and storing pollen?

Cut off the anthers (See illustration issue 2, CROSSWORDS). Catch the anthers on some dark paper and allow it to dry. Fold the paper with the pollen and anthers inside, label it, and put it in a screw top container. Include some dessicant if you wish, this will keep you in business for a few months, if you manage to keep the pollen dry. To store pollen for a year or so freeze it after it dries.

Frances N. Batcheller

Glossary for Hybridizers — Part II

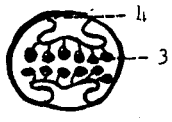
Protandrous describes a plant which sheds pollen before maturity of stigma. This is the case with most gesneriads (1 a,b) *Protogynous* describes a plant which matures the stigma before the pollen is shed. Both of these conditions tend to prevent self-pollination. *Pollination* occurs with the application of pollen to stigma. To be successful, a pollen grain must *germinate,* sending a tube through the opening in the stigma, growing down the style and into the ovary until it reaches an *ovule* (2). For this reason, it is better to use pollen from the longer-styled parent on the stigma of a shorter-styled parent, so it will have sufficient food for the journey. *Fertilization* occurs with the successful union of pollen tube and ovule, resulting in the formation of a seed.


1 a


1 b


2

An ovary which contains seeds becomes a *pericarp* or fruit. In gesneriads, it consists of a *locule* (3) or chamber without partitions. The *placenta* (4) is the zone of the pericarp wall where the seeds are attached. *Valves* (5) are the split parts of the ripened pericarp. A *suture* (6) is a line or groove indicating the position of the valve edges. The seed is attached to the placenta by a *funiculus* or stalk. Another type of seed appendage is an *aril* (7), a fleshy covering or collar-like out-growth which occurs in *Codonanthe* and is probably useful in animal (specifically ant) dispersal. *Hairs* (8) occur on the seeds of *Aeschynanthus, Agalmyla,* and *Lysionotus,* probably useful in wind dispersal.

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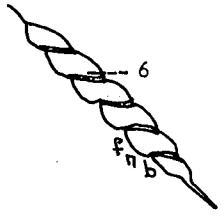
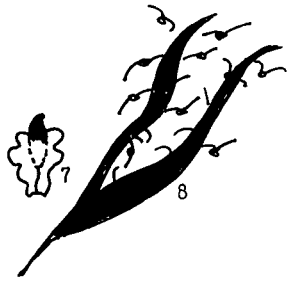
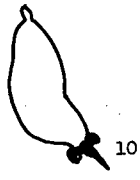




Indehiscent fruit does not open to release its contents, except finally by decay. In gesneriads this form is a *berry.* Examples are found in *Columnea* (9) *Corytoplectus, Neomortonia, Rufodorsia, Besleria* and *Cyrtandra* (10). The pulp of the berry is formed from the enlarged and curled funicular tissue. Berry-like fruits, with the same pulpy interior, occur in *Nematanthus* (11), *Chrysothemis,* and *Episcia,* but the outer skin eventually opens along suture lines. *Dehiscent* fruit splits open along suture lines. In gesneriads the dry fruit is a box-like container, or *capsule* which splits into 2 valves. *Streptocarpus* (6), *Aeschynanthus* (8), *Gloxinia* (12), *Ramonda* (5), and *Sinningia* (13) are examples of capsules.


9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11


12


13

WHAT NOT TO DO WITH A HYBRID

Renee White, Providence, R.I.

Take Sinningia 'Zoe' for instance. Hybridized around 1971 and registered in 1973, its only merit seems to reside in its name. It is one of the two sinningias whose name starts with a Z, which pleased Paul Arnold to no end when he put the Sinningia Register together.

I was in the first flush of understanding that, in order to create a hybrid, all I had to do was to put pollen from one plant on the style of another one. As it happened, Sinningia 'Grace M' (which is a cross between S. 'Dollbaby and S. eumorpha) was blooming lavishly and a friend discovered on her light bench a S. richii in the same condition. I took a flower home, put its pollen on S. 'Grace M' and eventually harvested a seed pod. Out of a dubious mixture of seed and chaff, five seedlings came up. Three failed to thrive, one produced a very small, all-white flower on which I rested many hopes, and the last one obliged with two flowers of some distinctiveness. The white-flowered hybrid took a look at the growing conditions I was offering it, and decided that this would not turn into a situation of mutual esteem. The lone survivor, called Zoe to celebrate a rambunctious Siamese kitten, turned into quite a character, the least attribute of which being that it is a triploid and no amount of experiments by several interested and knowledgeable friends have ever succeeded in making it change its mind. Chemicals have been ineffective, and so have been leaf cuttings. It has no intention of becoming a tetraploid, fertile or otherwise.

Under the best of circumstances, which vary according to the phases of the moon rather than a methodical system, the flowers reach a diameter of 1 1/2 inch, with a very faint orchid shade on the tips of the petals, a yellow streak in the throat and the typical striations and dots inherited from Sinningia richii. The foliage rarely exceeds 6 to 8 inches in diameter. And, as the original tuber aged, the plant bears up to six flowers at the same time.

What does one do with such an uncooperative hybrid? Well, in the first place I should have waited much longer before registering it. As soon as I learned how to obtain an application form, I registered it, and mostly out of sheer vanity. At least, this was one good lesson in learning how to describe a plant accurately. But from there, what? Commercially, it's a dud, although it is a tough little plant. You can step on a tuber and it will re-sprout, but you can bet on its never performing as described when you give a cutting to a friend, and the experience spells in big fiery letters:

Don't jump to conclusions when you see the first flower on a hybrid, don't rush to register it, use your commonsense and whatever patience you have and, if you are still bent on keeping the impossible hybrid in your collection, you can console yourself with the knowledge that it was a 1/1000 shot deal, and that you have a rarity on your hands. Not much help when you are short of room for storing your tubers. Any suggestions?

??????????

Will monocarpic *Streptocarpus* cross with the rosette types?

Yes, but the hybrids usually bloom once, then wither like the monocarpic parents.

Are there any good crosses that can be made with *Sinningia* 'Dollbaby' or *S.* 'Cindy Ella' which will be new or at least a step away from what has already been done?

We think there are some more good crosses and combinations of genes still available for the person who can beat the sterility problems associated with the tetraploids.

G.H.A. STAFF 1977

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Anyone interested in taking on all or part of this task in 1978 please contact Art Belanger

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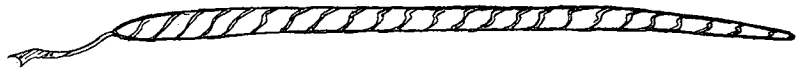

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