PAEONIA

Volume 4, No. 1 March, 1973

REQUIRED READING –
1. "The Peonies" by John C. Wister, $3.50 from American Peony Society.
2. The Bulletins of the American Peony Society.

The PAEONIA is authorized by Miss Silvia Saunders.

Our leader and teacher in hybridizing is Roy Pehrson.

Editors are Chris and Lois Laning, 553 West F Avenue, Kalamazoo, Michigan, A'9007. Suggested yearly contribution to cover expenses of printing and mailing is $2.00.

TABLE OF CONTENTS

LETTER FROM ROY G. KLEHM, President, American Peony Society.

TO: Chris Laning December 6, 1972

Dear Chris,

I have been told by some of the old-timers of our Society, many of whom are now gone, that years ago peony varieties appeared in this country under numerous names. It was confusion supreme when it was found that a variety like '**M. Jules Elie**' actually was in the trade and in peoples' gardens in this country under 32 different names. This was one of the main reasons why the American Peony Society was formed and organized in 1904 — to straighten out and put some orderly semblance to the nomenclature and registration of past, present and future peony varieties.

Through the years since the inception of the Society the members have carefully corrected misnomers and diligently registered new varieties. We now have in our Society a very welcome enthusiastic response toward intelligent scientific breeding to improve our favorite flower. This is good — this is how we will create enthusiasm for the peony. This also has prompted me to again ask for the continued diligence and response for intelligent development and naming of new varieties.

The American Peony Society, through its Secretary-Treasurer, Miss Greta Kessenich, operates a very intensive nomenclature department. Before a new variety is named the name should be cleared with our Secretary to make sure it has never been previously used. After the name is cleared and if the originator wants to introduce the variety to the public this name should be registered and the registration fee paid to the American Peony Society — American Peony Society Secretary's Office, 250 Interlachen Road, Hopkins, Minnesota, 55343. Without this cooperation from our fine breeders, we will regress and the situation will again become chaotic and we will have failed in one of our main objectives and responsibilities to the horticultural world.

Sincerely yours,
/s/ Roy Klehm

P. MLOKOSEWITSCHI

Roy Pehrson

This, the only yellow herbaceous species is described in "The Peonies". In my garden it appears to be dependable, but it has always been much shorter in growth than the 40" given in the description. Mloko is a real gem which you may want to grow, even though it may not be really needed as a breeder plant.

Not so very long ago it seemed that the only way to get yellow color into herbaceous peonies would be through the use of mloko bloodlines in one way or another. Saunders had provided a tremendously time-saving boost to this effort with several series of fertile hybrids containing mloko blood. In these, the rather pale yellow of mloko is diluted or may not be evident at all. Logically the way to restore more of the yellow color would be to cross them again with mloko pollen. Unfortunately there are serious obstacles to rapid progress using this approach.

1. Mloko pollen "takes" poorly on those hybrids on which it has been tried.
2. The most fertile, most available hybrids of this, kind are tetraploids. Even if seeds could be had more easily, the seedlings would be quite sterile triploids.

All this would be tolerable if there were no other possibilities, but recent findings show that we may be able to get what we want without further direct infusions of mloko blood.

1. Further advanced generations of the Saunders hybrids, intercrossed, and crossings with other promising material may restore full mloko color values.
2. *P. lobata* has been found to contain the very same yellow dye as the one found in mloko. Hopefully the enzymes which provide for the synthesis of yellow dye is controlled by identical gene action in both species. If so the two strains might be usefully intercrossed, reinforcing each other.
3. A breeding result obtained by the late Sam Wissing seems to show that a factor for this kind of yellow exists in *P. macrophylla* too. If this is true it may be fortunate that some of Saunders hybrids with mloko blood also have macro in them.

I have bloomed considerably less than 200 seedlings containing mloko blood. One of these (Quad F2 x Moonrise F2) is about as yellow as a pale clone of mloko. It will be seen that this cross has in it all three of the species listed above. Obviously there is no way to determine which species, or combination of species, is responsible for the yellow color. It is enough just to know that further use of mloko itself is not necessary.

I have no competence at all in the field of chemistry, but something Fred Cooper, our expert on this subject, once wrote to me raises some interesting speculations. Unless I misunderstood, the sense of it goes like this; the white color in peonies is produced by compounds which differ but very little from that which makes mloko yellow. That yellow indeed, is only an intermediate stage in the biosynthesis of "white".

Accepting this explanation, it then seems reasonable to think that "white" results from "epistasis" or "multigenic action". Then if a final gene responsible for changing "yellow" to "white" should be absent, the color synthesis process will be halted at the "yellow" stage.

I can't think of any way to make practical use of information of this kind. We shall have to be content with knowing that if we grow enough seedlings from suitable crosses we will get some yellows. "Experts" have no advantage here.
Here is how I would rate the hybrids containing mloko blood for potential for producing yellows.

1. The most promising perhaps -
    a. The mloko-maco hybrids such as 4710 F2, 9037 F2 and the '**Nova**' strain,
    b. The Quads. Actually their F2, F3 descendants.
    c. The '**Roselette**' and '**Rushlight**' group. Again, the advanced generation plants.
    d. '**Nancy**'.
2. A bit less useful — again "Perhaps"
    a. The '**Nosegay**' and '**Gwenda**' group
3. More difficult — I think.
    a. emodi-mloko and vietchi-mloko
    b. P. mloko itself
    c. '**Belinda**'

Progress toward the goal of yellow peonies may seem rather slow, but nothing, once gained can be lost. There are no steps backward. The change in prospects from only a few years ago is very encouraging. The pale yellow of mloko will yet provide us with very nice peonies, including blended colors. But this is not all. When the big breaks start to come through the use of the two other, and very different yellows in *P. lutea* and *P. ludlowi*, the final outcome may exceed our wildest imaginings.

Don Hollingsworth reported in the December Bulletin that he made a number of crosses using '**Nova**' pollen and got no seeds. He concludes that his pollen may not have been viable.

My '**Nova**' bloomed for the first time last summer. I too used it in a number of different crosses. About half of these failed too, but five of these crosses made perhaps 80-90 seeds altogether. All these were much undersize, but I thought some might grow. Well, one seed has germinated thus far but the others remained small and hard, and many now are rotting in the bags.

There is obviously something "funny" about '**Nova**' pollen, but I can't explain it. Saunders appears to have produced 7 hybrids of mloko x macro — a difficult cross. From these came no less than 111 F2 plants, one of them '**Nova**'. Eventually there were 9 F3 plants also. It seems that all these plants were much alike. He now used two of the Fl plants in crosses onto '**Otto Froebel**' and Officinalis rosea plena to produce a line of hybrids used in further breeding. Two hybrids from the '**Otto Froebel** ' cross and one from the other were used to cross onto lactiflora. One hundred sixty seven seedlings were obtained. It is from these that the Quads were selected. The record I have does not show it, but since 111 of these seedlings came from pollen from the officinalis parent it is likely that most of the named Quads contain officinalis rather than '**Otto Froebel**'.

White's '**Nancy**' came from crossing Officinalis rubra plena with one of Saunders Fl plants, No. 4710. I find that its pollen too tends to make some poor seeds. However, I have bloomed 2 seedlings of '**Archangel**' x '**Nancy**' and one of these was worth saving.

The mloko-macro hybrids clearly have a potential for producing good hybrids. It would be more fun to work with them if some cross should be found to produce a more gratifying seed crop. Reports are wanted from anyone who has had some experience with them — either good or bad.

PEONY HYBRIDIZING: GETTING STARTED

Bill Seidl

In the way of introduction, let me say that my first peony seed was harvested in 1960 from hand-pollinated lactifloras. From these I eventually flowered about a dozen plants. I had not recorded the parentage, knew nothing about peony species and hybrids, and considered the experience a rather frivolous experiment. Although it was satisfying to point to so-and-so peony plant in bloom and say that it was raised x years ago, I did not intend to pursue the subject further.

My chief gardening interest, since 1958, is the hybridizing of gladiolus for fragrance, but it is a disappointing business as the most promising seedlings quickly fall victim to disease. (Roy Pehrson will say "Amen" to that.) And so the apparent good health of other plant genera seemed to promise more durable rewards to the hybridizer. Because daylilies (hemerocallis) seemed especially attractive, I obtained various daylily catalogs, Wild's among them, to learn about the different cultivars available and hybridizing trends. However, it was the hybrid-peony section in the Wild catalog that attracted my attention. The descriptions therein — with their references to different ancestral species, to triples and quads, to sterility, fertility, and polyploidy — made me aware of challenges and potentialities here that did not exist for the breeder working within the limited gene pool of the single lactiflora species. I subsequently purchased some of these hybrids and joined the APS to find out what to do with them.

The experiences described above convince me that the APS could obtain some new members by "raiding" the membership of other specialty-plant societies by advertising the news that NEW peony cultivars are available, MORE are in the making, and MANY MORE await development because the doors to many different untapped gene pools have been unlocked. This is the theme that Roy has voiced so many times before.

My first less-frivolous crosses were made in 1969 between various tetraploid herbaceous hybrids. This seed, along with some from Silvia Saunders, was germinated "quickly" and produced two flowering plants last summer, three years from seed. The most trying part of breeding is those first four or five years when one plants successive seed crops without seeing any bloom. Once this "dry" period is over, the constant parade of fresh-blooming crops and the better performance of older seedlings will renew the hybridizer's interest and spur him to further efforts.

Being still pretty much in the dry period and having few seedling blooms to study, I do the next best thing—— look a lot at the foliage. Spring, summer, or fall, each plant exhibits foliage characteristics and plant habits that invite comparison and already mark some seedlings as more desirable than others. Can anybody foresee all the different foliage types obtainable from the various combinations of the distinctive foliage of tenuifolia, officinalis, the lutea hybrids, the Windflowers, and the glaucous-gray of The Lavenders or Russi-Major, not to mention the already fine foliage of lactiflora? Since peonies remain out of bloom for so long a time, it is essential that, as foliage plants, they be attractive and remain so well into fall.

Although the relatively long time from seed-harvest to characteristic bloom discourages many a would-be peony hybridist from ever beginning the task, it is also a blessing-in-disguise for, to survive that length of time, a seedling must already possess a good measure of health and disease-resistance. This in turn is passed on to the next generation. By contrast, in gladiolus, hemerocallis, etc. the new seedlings bloom so quickly from seed (two years with adequate care, one year in southern climes) that the hybridizer, impatient to reach his goals, tends to use

these seedlings, unproven and untested for disease-resistance, to father the next generation, with a subsequent accumulation of hidden weaknesses in admittedly beautiful-flowering plants.

In describing some of the successful crosses I've made, the reader should realize most of these seeds are as yet un-germinated — they are "successful" in that the seed seemed firm and fully developed. I'll not dwell on crosses that are known to be readily accomplished. The "landscape gardener's cross" was aptly described by Don Hollingsworth (Vol. 3, #3); it works. "Sterile" varieties are more apt to set seed when pollinated with fertile pollen rather than left to their own devices. The blooms on one clump of '**Sprite**' produced two seeds and one seed in the last two years of pollinations by fertile tet pollen ('**Moonrise**', Saunders 16450-F2). Similarly, for '**Halcyon**', one seed and one seed; '**Rose Noble**', three and three; '**Chalice**', four and six. This past season '**Early Windflower**' by '**Sparkling Windflower**' and 16350-F2, mixed pollen, produced two seeds. '**Rushlight**' and '**Nancy**' are dependable if not generous seed setters. I'm not aware of anybody describing '**Pageant**' as fertile but its listed parentage in The Peonies, Officinalis rosea plena x lacti-macro F2, would indicate tetraploidy. A division obtained from Top O' The Ridge has produced 14 seeds by '**Moonrise**' and '**Archangel**' and 40 (yes, forty) seeds by 16350-F2. Two blooms of '**Sparkling Windflower**' set no seed last season but its pollen proved quite fertile on several tets. Two recent introductions, '**Fayette**' and '**Coral Fay**', are listed as being from '**Laddie**' selfed; so I pollinated '**Laddie**' with tet pollen and harvested eight seeds. '**Thunderbolt**', delavayi hybrid, by fertile tet pollen, produces large black almost-firm seed but so far all have turned out bad; '**Age of Gold**', lutea hybrid, produces similar seed but one (by '**Moonrise**') does appear quite large and firm. In Ito-type crosses, '**Mystery**', '**Heart of Darkness**', '**Canary**', '**Chinese Dragon**', '**Amber Moon**', '**Thunderbolt**', Daphnis 222, and '**High Noon**' were used for the good quantities of pollen they produced but it is too early to say which ones, if any, were effective. '**Alice Harding**' x POTANINI TALL YELLOW produced up to 15 near-firm seeds in two pollinations but their fertility is doubtful. The pollen came from David Reath's specimen exhibited at Mansfield and had probably lost its fertility.

In the latter cross above, most readers will recognize '**Kakoden**' as the white herbaceous lactiflora seed parent of the Ito hybrids ('**Kakoden**' x T.P. '**Alice Harding**'). Much has been said about Mr. Ito's famous cross and the chromosomal make-up of '**Alice Harding**', but perhaps there is something special about the lacti seed parent that made the cross so successful. Having originated, presumably, in Japan, '**Kakoden**'s ancestry, I suppose, is as mysterious as the Orient.

Concerning this subject, I cannot help but recall a rather startling remark at the Mansfield Hybridizing Workshop — by Father Fiala, I believe. He was passing on information that had appeared in some Japanese gardening publication to the effect that Mr. Ito's assistant (who made the actual cross) brought back — was it one (?) bloom of '**Alice Harding**' from another prefecture and pollinated only the blooms on one, or two (?) clumps of '**Kakoden**'. The story is at least consistent in that a single bloom of '**Alice Harding**' would hardly supply enough pollen for 1200 pollinations, as is told in the "other" version of this story. On the other hand, it contradicts Roy Pehrson's estimated that 1 in 100 pollinations is the success ratio of obtaining true hybrids. These contradictions can be resolved quite simply. The answer will appear in my next contribution ... (if I'm asked to make one).

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But it begins like this! —— and then some Japanese letters or words, but how shall we reproduce them? Editor

LOBATA

Many years from now, when much more hybridizing has been done, it may well be that this species will have proven itself the most valuable herbaceous species of all except for lactiflora. There are presently far more hybrids of lacti. x officinalis than any other cross. If this near relative of officinalis was much less used by the early hybridizers it must have been because then as now, plants of officinalis were more commonly grown and available.

There may be another contributing factor. I have seen only my own plant of lobata, but it is clear that there are a number of different color phases in the species. One type which contains a color factor for yellow produces far more novel colors in its hybrids than the others. This type may also be a much more effective pollinator of lactiflora than the others.

Saunders used several kinds. His records refer to these by numbers which he gave them. These produced little of importance, though a deep crimson, No. 5267 is the pollen parent of '**Heritage**', '**Your Majesty**' and '**Montezuma**'. His big break came when he used one which he obtained from Amos Perry in England. This one he described as a bright vermilion color. When it first bloomed he used it in many crosses on lactiflora and bloomed some 1200 seedlings from them. All were attractive in color and the best constitute his great "lobatas".

Obviously every hybridizer ought to obtain a plant which would be equivalent to the one Saunders called "lobata (Perry)". Unfortunately I don't know how this can be done. Silvia has told us that the original "Perry" clone no longer exists. I do think that some at least of the plants she used to offer may have been descendants of it. My own plant, obtained from her, is a bright "scarlet"-red with a yellow content - as confirmed by a paper chromatograph test run on petals sent to Cooper. Its pollen, just as with lobata (Perry) sets seed profusely on lacti. It seems reasonable to suppose that some, maybe all, of the plants she turned over to David Reath were of this kind. Whether or not Dave may soon offer these for sale, I don't know.

Now how about lobata "**Sunbeam**" which also made good seedlings? Did its pollen also set big seed crops on lacti? We don't know. Is that lobata "**Sunbeam**" now offered for sale the very same? We don't know that either. Unnamed clones of lobata are offered in the trade too. Are any of these of the right kind? Obviously there can be no certainty that a plant obtained by mail order would be the wanted kind. If plants were obtained from several sources the chances would probably be better. Some of you live close enough to the few sources of supply so that you could visit them and see the plants in bloom before purchasing.

The outer skin of most red tomatoes is yellow. The red flesh seen through this skin produces a color effect about as close as anything I know in nature to the wanted color on lobata. There should be no hint of blue as is so universal in all other "red" herbaceous peonies. Saunders produced his four "little reds" by the use of lobata (Perry) on four different forms of double officinalis. The wanted color genes should be present in each of them. These might produce even more interesting seedlings than lobata itself, because in addition to the chance of getting those good colors, they might also have more doubleness.

The use of these four would be a very fine alternative to the use of lobata itself, but here too there are some problems. First of all, plants have probably never been plentiful. Secondly, Father Fiala's fine article describing the breeding responsible for the Cousins' "Inner Glow Hybrids" and the part which '**Good Cheer**' played in their development, may already have created a considerable demand for '**Good Cheer**' and for the other three as well. Late comers may have trouble finding a source of plants. But try anyway! Finally there may be yet another obstacle. Both David Reath and I were fooled for some years by a misnamed plant which we obtained from the same grower as, supposedly, '**Scarlet Tanager**'. After much use of pollen from this plant I belatedly concluded that it must have been one of the lacti-officinalis hybrids. I finally destroyed it and obtained a genuine plant which should bloom this season. I feel sure there was no deliberate deception on the part of this grower, but as I did not complain to him I don't know whether he may have done anything about his misnamed stock.

Saunders' "big notebooks" do not indicate whether he may have crossed lobata with anything other than lacti and officinalis. It's possible that he did not.

The "Little Reds" are seed-fertile tetraploids. The lacti-lobatas are triploids and very seed-sterile though there will be a seed occasionally. '**Moonrise**' came from such a seed and Saunders had others too, but they are not described in his "big notebooks".

Where do we go from here? Evidence from trials made up to now is too small to permit making strong recommendations. I will make some suggestions at another time. Meanwhile hybridizers should try whatever comes to mind and see what happens. Certainly lobata has marvellous potential. It's up to all of us to discover the best uses for it.

The following Table lists parentages of Saunders' named Lacti-Lobata seedlings.

SAUNDERS LACTI-LOBATAS

Pod Parent	Pollen Parent	No. of Seedlings	Named Selections
1302	lobata (Perry)	70	'**Coralie**'
2011	lobata (Perry)	124	'**Alert**', '**Bravura**', '**Cardinal's Robe**'
'**Primevère**' [1]	lobata (Perry)	188	'**Rose Diamond**', '**Fortune**', '**Lovely Rose**'
441	lobata (Perry)	214	'**Skylark**', '**Claudia**'
'**Adolphe Rousseau**' [2]	lobata (Perry)	5	'**Lustrous**', '**Red Red Rose**'
1952	lobata (Perry)	60	'**Olivia Saunders**', '**Great Lady**'
'**Venus**'	lobata (Perry)	66	'**Rose Tulip**'
1875	lobata (Perry)	58	'**Ludovica**', '**Jean Cowley**', '**Paladin**', '**Cytherea**'
3500	lobata (Perry)	18	'**Elizabeth Foster**'
2635	lobata (Perry)	15	'**Julia Grant**', '**Queen Rose**'
2529	lobata (Perry)	21	'**Cecilia**'

'**Kelway's Glorious**' [3]	lobata (Perry)	25	'**Laura Magnuson**', '**Ellen Cowley**', '**Sophie**', '**Carina**'
2449	lobata (Perry)	22	'**Alison**'
1833	lobata (Perry)	33	'**Red Cockade**'
'**James Kelway**'	lobata (Perry)	22	'**Nathalie**'
2402	lobata (Perry)	96	'**Gilliam**', '**Grace Root**'
'**Marie Jacquin**' [4]	lobata (Perry)	23	'**Alexander Woollcott**', '**Nadia**', '**Constance Spry**'
1918	lobata (Perry)	4	'**Masterpiece**'
3458	5267 (deep crimson)	43	'**Your Majesty**'
1195	5267 (deep crimson)	28	'**Montezuma**'
5267	white (Glenn)	8	'**Heritage**'
Parentage Unknown		1	'**Janice**'
lobata (Perry)	'**Lady Alexandra Duff**'	3	'**Jeanette**'
lobata (Perry)	albiflora	21	'**Rose Garland**'
F2 albi-lobata		2	'**Red Lacquer**'
F2 albi-lobata		14	'**Moonrise**'

Note 1. '**Primevère**' - medium size anemone, creamy white with short narrow petals of canary yellow. '**Primevère**' x lobata (Perry): from 188 seedlings of this cross, only three, '**Rose Diamond**', '**Fortune**', and '**Lovely Rose**' were introduced.

Note 2. '**Adolphe Rousseau**'— double type; very large; early midseason; dark lustrous red. From 5 seedlings, two — '**Lustrous**', and '**Red Red Rose**' were introduced.

Note 3. '**Kelway's Glorious**' — double type; very large; midseason. White with few crimson markings. From 25 seedlings of this cross, '**Laura Magnuson**', '**Ellen Cowley**', '**Sophie**', and '**Carina**' were introduced.

Note 4. '**Marie Jacquin**' — semi-double; large; midseason. Pale pink becoming white. This lacti x lobata (Perry) cross gave 23 seedlings, of which three were introduced. The names of these are: '**Alexander Woollcott**', '**Nadia**', and '**Constance Spry**'.

This should give some idea of what results can be expected using various lacti pod parents and a pollen parent similar to lobata (Perry).

- Roy Pehrson

'M. JULES ELIE'

'**M. Jules Elie**' just has to be one of the all-time greats in the peony world. Having been introduced almost 100 years ago, he still is being listed in present-day catalogs. As a contender for top honors in the cut-flower industry, he has been very durable.

What really puts him in an exalted position, though, comes as a surprise. He is the very good mother (useful as a pod parent) of some of our newer introductions. The American Peony Society Bulletin #198 (December 1970 issue) lists a number of C. G. Klehm introductions which he (Mr. Klehm) patented. These clones, or plants, had Mr. Elie for their seed parent. Murawska's '**Attar of Roses**' had '**M. Jules Elie**' for its mother. And Dr. Earle B. White must have thought this variety was something special since, for many years he made '**M. Jules Elie**' x mlokosewitchi crosses and finally succeeded in getting the hybrid plant, '**Claire de Lune**'.

'**M. Jules Elie**' is an early, very large double of nice rose pink color. Foliage is not very dark green, also the stems will not hold the great flowers above muddy ground when rain drenched.

Maybe I too will try to make a lady out of him this year.

- Chris

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A BIT OF BLACKMAIL

Our "Paeonia" needs diversity. No one who has sent $2.00 to Chris should feel that he is "subscribing" to a publication that he might like to receive. It's not like that at all! He should feel that he has committed himself to a cooperative venture which will not work at all well unless he provides his own input from time to time.

So here is what we'll do. Send in a little account of what you are doing, what you are trying to do — just anything at all — and you will receive from me one of the following:

1. Some sprouted seeds ready to plant out.
2. Some dormant seeds next fall.
3. Some one or two year old hybrid plants next fall.

Anything sent will be hybrid, most will be tetraploid, and most will also make fertile plants which could be useful. Those who would like some sprouted seeds will have to act quickly as planting time will be almost at hand when you receive this copy.

Send your little account either to Chris or to me. Either way it will be taken care of.

Roy Pehrson
501 S. Victory
Mankato, Minnesota, 56001

SEED LIST

What can you expect to get from Roy if you comply with his suggestion? Well, here is a list of seeds that I have, many of which were gotten from Roy. Please note the extremely valuable parentage of these seeds. Anything he gives will probably be far more advanced than you or I can produce by ourselves.

'**Chalice**' x lobata	70
'**Rushlight**' F3 or F4	75
Quad F3 or F4	50
'**Archangel**' open	30
'**Archangel**' x '**Nancy**'	10
'**Shaylor's Sunburst**' (small root also sent)	175
Mauve bomb – open	35
Roy's yellow, second best	3
One T.P. seed and 1 '**Red Charm**' x '**Nancy**'	1
'**Christine**' x lobata	45
Quad F2 x '**Moonrise**' F2	25
'**Battle Flag**' x '**Red Red Rose**'	15
'**Sable**' & '**Sable**' x lobata	15
T.P. Saunders F2A	5
Ito '**Vesper**' x '**Alice Harding**'	50
Ito '**Largo**' x '**Argosy**'	2
S.S. Hybrids, mixed	20
Ito DeYoung's #l-3-4-6-8-9-10-11	90
'**Primevère**' x *californica*	70
'**May Lilac**' F2 plant #5	50

Ito Neighbor Miller's Plant - '**Vesper**' x F2A	80
Ito 1970 & 71 plants and Saunders F2A	75
'**Rushlight**' Plant #13	50
S.S. Plant #16 (12128)	50
'**Archangel**'	20
Ito Lanings x yellow T.P. pollen	125
Lacti x *californica*	30
'**Nosegay**', open	70
Windflower F2 x '**Nova**'	17
Windflower F2	3
'**Silver Dawn**' F3	3
'**Nancy**', open	2
'**Pageant**', open	7
'**Roselette's Grandchild**' (VanZandt's)	60
'**Roselette's Child**' (counted tet)	36
Windflower F2	1
'**Golden Dawn**'	11
'**Roselette's Child**' F2 x '**Nova**'	75
'**Rushlight**' F3 or F4	70

GARDENING NOTES

1. Roy's germination method is not good when applied to tree peony seedling propagation. They (the .T.P. seeds) give the impression that they consider this method on par with transplanting. They (the one and two year olds) will not very willingly tolerate transplanting. Maybe the "Ito type cross" also falls within this category.
2. For maximum seed production, a hungry plant will provide higher quality seeds. "Underprivileged" plants "— those getting insufficient nitrogen — seem to redouble their efforts with regards to seed production.
3. Roy's idea on Styrofoam boards (see Dec. 1972 issue of PAEONIA, page 10) needs further development. Suggestions:
    a. Styrofoam boards cause etiolation.
    b. Mold development is prevalent.
    c. Two inch layer of vermiculite insulation between soil and Styrofoam acts as a buffer — mollifying both problems A and B, if not preventing them completely,

NOTE: These notes are to be considered only as observations, not presented as facts.

- Chris

LETTER FROM A NEW MEMBER OF THE AMERICAN PEONY SOCIETY IN ENGLAND

C. Graham-Jones
"Redgarth", The Piece
Churchdown, Gloucester, England
February 4, 1973

Dear Mr. Laning,

Many thanks for your letter and back copies of "Paeonia" which are making very interesting reading.

With reference to the *P. suffruticosa* seed supplied, some very interesting observations have been recorded. When received, the canister containing the seed and vermiculite was tipped out and all the seeds examined, these were all dormant, they were put .back into the canister and stored for a further seven days in the dining room cupboard before time was available to plant (temperature of dining room 68/70 F.). To my amazement, when removed for planting 47 had rootlets over 1 inch long and a further 20 were showing white pips. The remainder to date, although planted in boxes are still dormant. My reaction to this could be the drop in temperature during flight plus the rise in room temperature has excited certain strains into growth.

Your reference and explanation of "Windflower" is very interesting, particularly the reference to "The Peonies" by John C. Wister. When I wrote previously I did not have this book but have now received copies of the two books listed as suggested reading, from the Secretary. The books at the moment will be used for reference, time being very short for reading. My program this year will be grafting. Talking about grafting with P. lactiflora, I was speaking to a representative of Kelway & Son from Somerset who specialize in herbaceous peonies, but carry a small stock of tree peonies under their own variety names, and they say they have never had a graft to take, so already I have a challenge. One point which interests me very much in some of the literature I have received is the suggestion that if each member produced one hybrid each year the Society and the Peony would be greatly improved. Unfortunately, being comparatively new, my stock, which I list, has not got to a stage where I can take part.

Stock:
1-3 year old P. lutea ludlowii.
1-3 year old P. suffruticosa var. Yachiyo Tsubaki.
5-2 year old P. suffruticosa, colour unknown.
1-2 year old and 1-1 year old seedling of P. suffruticosa obtained from the nursery of M. Harold Booth during a visit. This grower and hybridist gave up tree peonies in 1971.
6 - 2 year old plants which were obtained as self set seedlings from an old garden in Broadway Worcestershire and think they are P. lutea and delavayi, but this has to be proved.
1-8 year old P. mlokosewitchi which I raised from seed.

From this list you will see I have a long way to go unless I can cross P. mlokosewitchi x P. suffruticosa var. Yachiyo Tsubaki, and as this is a hybrid, this will have to be studied. There is very little stock held by nurserymen in this country and the stock they do hold in the main are imports from Japan. I would be interested to know if the Society has any trading agreements with

nurserymen which supply the Society at a cheaper rate and the Society make a small amount out of the transaction for themselves. This method on certain plants is quite popular in this country. One variety on my list is P. suffruticosa var. Dr. Rock. This was the first tree peony I tried to purchase, when seen in full bloom in the arboretum of M____ Hollier and Sons, Winchester Hunts, but unfortunately they have never propagated it. I notice from your literature it is scarce and expensive in the U.S.A. I submitted the article to the R.H.S. (Royal Horticultural Society) and although they thought it was excellent, they returned it saying they considered it would only have limited appeal. I am now rewriting it with more emphasis on the peony and will forward when complete.

Work is quickening up here as we have had no winter in this area, with only a few light frosts, and at the end of January my plant of P. suffruticosa var. Yachiyo Tsubaki has breaks from the stems three quarters long.

Yours sincerely,
/s/ C. Graham-Jones

NOTE FROM THE EDITORS:
Some of you are receiving this issue of PAEONIA for the first time since you have just recently joined the American Peony Society. If you would like to receive four issues per year, please send your contribution to the Lanings (address on page 1).

Those of you non-contributing members will be dropped after this issue unless you indicate interest in receiving PAEONIA.

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ANOTHER PICTURE
This one shows what a well-dressed peony seed parent should luck like near the close of the pollinating season.

When work was being done on this plant all buds which had opened enough to expose the center were pulled off. Others not yet opened were pollinated with tree peony pollens and bagged immediately. A close look at this picture will reveal some lateral buds almost overdue for pollination. Don't worry about them. It was taken care of.
I have three good plants of this lacti jap ('**Vesper**'). I like it because it makes nice seeds, because it stands up well, because it has strong laterals, and because I already have not less than 8 "Ito" type seedlings from it.

This picture should illustrate better than words can do, the sort of effort which is desirable when difficult crosses are attempted.
(Picture by P. Post)

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FLASH !!!!!!

O.K. team, this is what we must do. Each one of us (about 95 persons in all), send Roy a birthday card. Who is Roy? Don't be so dumb! He is our teacher, the writer who makes this PAEONIA possible.

Roy Pehrson is a bachelor. Age? Well, on May 17 he will be 68 years old. His address is 501 S. Victory, Mankato, Minnesota, 56001.

- ED.

PAEONIA

Volume 4, No. 2 June, 1973

REQUIRED READING –

1. "The Peonies" by John C. Wister, $3.50 from American Peony Society.
2. The Bulletins of the American Peony Society.

The PAEONIA is authorized by Miss Silvia Saunders.

Our leader and teacher in hybridizing is Roy Pehrson.

Editors are Chris and Lois Laning, 553 West F Avenue, Kalamazoo, Michigan, 49007.

TABLE OF CONTENTS

OFFER FROM ROY PEHRSON

I have about 550 lacti x lobata (several pollens), lacti x '**Lady Bird**', lacti x Little Reds F2, and a very few lacti x '**Good Cheer**'. Almost all of these are coming in their 5th year and I should be able to till them out this fall to make room for replanting. It looks like a number of these won't bloom, even at 5 years age but I think I'll just assume that the slow ones are also weaklings and till them out. I may find it painful to destroy many plants which some would find to be nice ornamentals, but I don't know how to give them away. I'd gladly send them around but the offer would have to appear in June as I'd want to start digging by mid-August.

BOOK REVIEW - "Create New Flowers and Plants"

If you are locking for a book that is easy to read and full of practical suggestions, obtain a copy of the book by John James, "Create New Flowers and Plants", price $4.95 (that's almost $5.00). I bought this book about seven years ago, at a time when I was thinking about trying my hand at hybridizing peonies.

Information from the book's jacket --- "Whether through discovery, selection, hybridization, or mutation, the creation of a new flower or plant is for many the greatest thrill a gardener can experience.

"Chance, the author points out in his introduction, is the great leveler; the odds of creating or discovering (even in one's own back yard) a new variety are as much in favor of the layman as the professional. There are no secret processes involved, no special skills necessary. The only prerequisites are a deep interest in flowers and plants, patience, and a plot or pot — indoors or out.

"With vigorous — and infectious — enthusiasm, and with the aid of exceptionally fine photographs (including many by the author, who is also an expert photographer), Mr. James introduces the reader to the flowering process, the mystery of the living cell, and the fascinating world of genetics, demonstrating how to discover, create, and even merchandise brand-new varieties of flowers and plants, This book is the definitive, non-technical work in the field of creative gardening.

"ABOUT THE AUTHOR — John James (who has been referred to as the "Frankenstein of the flowers" for his advanced experiments with radioactive plant mutation), has created hundreds of interesting new plant varieties on two test farms in northern Ohio — among them a plum-sized sweet cherry and a rose whose scent seems to repulse Japanese beetles. In addition, he has written for radio, television, and motion pictures; contributed to the development of color photography; pioneered in both radio and TV production; and patented several mechanical inventions. Mr. James was born and educated in Cleveland, Ohio."

- Chris Laning

IN SEARCH OF THE MOUTAN

C. Graham-Jones, Gloucestershire, England.

The opportunity arose in early October to have a holiday which was organized by a hotel on the edge of Dartmoor East Devon) and consisted of a gardener's week in the Devon/Cornwall area, with a qualified guide to lead the way. This was something new for my family and self, so we left Churchdown (Gloucestershire) in thick fog with a mind clearly as thick on what was in store for us; however, as the saying goes "The first impression is important". This is very true, when we arrived at the hotel the situation, accommodations and evening meal were first class. Our guide, a charming person, introduced herself and invited the members of the party numbering twenty-five to the games room for coffee. Here we all had to introduce ourselves, outlining our interests; after this we all knew each other and the scene was set with our guide supplying a programme for the week, ending with the words, about 10:30 p.m., "We leave at 10 a.m. in the two mini-buses which will be waiting in the morning. All was set -- an early breakfast, packed lunches, flasks of tea were loaded into the buses and we were away.

Our first stop was a modern bungalow in a wonderful setting, overlooking a large lake surrounded with a wooded area containing many new plantings. The lake was well stocked with nymphaea-marliacea-rosea (waterlilies) and wild life to charm it, but alas no Moutans, only P. lactiflora with leaves browning after a long season. From here we went to the coast - Exmouth - to have lunch on the sea wall and to our next stop, a residential property in this town, but here the mood changed, a large detached house well shaded from the road by trees and shrubs in about two acres of ground with a shallow fall from the house to a large clump of trees, with the view extending past the trees. This garden was full of rare plants Bellerdiora Longeflora, Lapageria Rosea, Cotoneaster Frigidus, Camellias, Callistemons, just to name a few, but again only a few P. lactifloras. We returned back for dinner - coffee - illustrated talks by our guide - cup of tea - bed. This has outlined the pattern.

The first call on the second day was in the moors near Okehampton and off the beaten track to a very dainty exposed garden which had been created by two Londoners who had decided to retire here. The layout covered beds of heather -Ericas - Calluna and Daboecia, many in bloom, plus a glorious bed of Gentiana - Gina - ornate, but no peonies of any type. Leaving here we had lunch on the moors and on to a house at Stiklepath named "Staplers". This house was about 700 years old and was an old wool receiving house for the moor sheep farmers. This contained a very small garden, but full of plants from all over the world, with many rare lilies, the lady owner being an expert on this subject, and here we had our first success, two tree peonies with foliage highly coloured, and both labelled. The first was P. Shereffiae, which I have not yet traced, and the other just read "T.P. 100 years old". I enquired from the owner the history and was informed P. Shereffiae was in the garden when she bought the house and the other was a division from a plant which had existed in a very old estate for a hundred years, colour and flower size was not obtained as with twenty-five people in a small garden, communications were difficult. We returned for dinner with a late night final word from our guide, "In the morning we start early, as we have a long way to go." Interest was increasing as we had found our first Tree Peony.

Leaving at 9:30 a.m. we headed across the moors and stopped at a large new dam — "The Meldon Dam" which had just been completed, having lunch during the stop and stretching our legs over the moors to see the view, before heading north to Torrington to "Rosemoor" the homo of Lady Ann Palmer who we found was the tours director of the Dendrology Society

(Trees and Shrubs). This was the site for the specialist, with many fine trees and shrubs to be seen, many under-planted with Cyclamen Neapolitanum and Colchicum speciosum. Items noted Euonymus cannutus, Pratinea var. Red Robin, Berberis thunbergii. var. Roseglow, and the herbaceous peony P. Veitchiana; however, a tree peony was located in the woods, which remains unidentified, although our host presented me with some seed from another plant in the estate. Unfortunately this seed was only shell with no kernel or should I say "a dud seed with no embryo". We left after a welcome cup of tea served by our host, and arrived late and tired for dinner.

The following morning was Sunday so things wore easy but after lunch we became organized again and motored to Gorquay to Cackington Hall, which is a very old house and estate containing its own church and now owned by the Gorquay Corporation. Here my search was more rewarding as we came across two very old tree peonies, one on the edge of a large lawn was extremely old with a central stem about four inches in diameter and the surrounding branches drooping umbrella fashion with age. I asked the attendant for information, but all he knew was it did produce seed and the other did not, the seed not lasting very long, just my luck.

Monday, being the first week day, our programme was revised, visiting two stately homes, the second being National Trust property -- however, this was my best day, finding some very large tree peony seeds in pods which were just opening, again with no identification, and the present owners were new with little knowledge of the old estate's contents apart from the new plantings with some fine specimens of Eucalyptus-gumii, pollarded to shape. Our next call was Saltrac House near Plymouth which contained very knowledgeable guides to conduct the party through the house, and after a pleasant tea in the old kitchen, of newly baked scones, where the original cooking facilities were still to be seen with the grate measuring 10' x 8', we returned for the evening; programme.

The next day, Tuesday, was our last, with the sun shining once again. This time we headed west across the moors to Endersleigh House near Tavistock, which for many years was the home of the Dukes of Bedford, a fine old property, surrounded by a very large estate, with the river Tamer running through the grounds. Our guide, who obviously knew the area, advised the use of Wellington boots, so we all changed. This turned out to be good advice as the terrain was very wet in the overgrown woods, which reminded one of the South American jungle conditions, with water from the previous day's rain dripping from the trees. We found examples of Victorian splendour, such as the Shell House (a garden house with the walls covered in shells), the Yew walk (a long path lined with trimmed yews), etc., before we returned to the wonderful old architecture of the house to have lunch. After lunch the expedition entered the semi-forest of the estate in the opposite direction where streams, waterfalls and lakes, in that order, were found, with many fine specimens of trees and shrubs, also the bog loving Gunnerii and the Giant Hog Weed made us seem small in comparison. We did find a clearing in the path and came across one solitary worker with a scythe trying to keep at bay the ever rising growth, and this chap was 68 years old, did somebody say a job for life! One great asset in this very large estate was all the old trees were identified with the botanical name, variety and country of origin, with many containing the planting dates, which ranged from the early to mid 19th century, but alas not a trace of the genus Paeonia. However, the week did outline that all the Moutans found were of 19th century and earlier vintage which seems to have been the heyday in this country, and with very little sign of survival in 1972.

PEONY HYBRIDISTS — ACTUAL OR POTENTIAL

Silvia Saunders

I have for several years now compiled a list of Peony Hybridists, Actual or Potential. Names of those of my customers whom I estimated to be at least "potential" if not "actual", since they had ordered from my nursery either my "Hybridists Headstart" Collection, or individual hybrid plants, which because of their bloodlines I reserved for Breeders Only, and placed in a separate listing.

I came to, in the fall of 1969 and suddenly realized that we had 50 Peony Breeders! They seemed to be sprouting up out of every crack in the ground; or so it seemed, compared to the drought up till then. So I made a list of their names and sent a copy to each one. Laboriously arranged, it started in Massachusetts and worked westward in a sort of zig zag fashion, clear to Oregon. This was done with a view to greater neighborliness. Each person could readily pick out the member living closest to himself, or herself, and perhaps exchange questions, findings, or even plants!

Then the idea of a Breeders' Newsletter was born. For the first year, The Kozaks ran it: Lois and her fine young husband, Don (now, alas, no longer with us). But this is a somewhat arduous task, and we felt that no one person should be too long burdened with it. After the Kozaks had inaugurated it and gotten out four excellent issues the first year, Chris Laning and his wife, also a Lois, took it over. They too are doing a splendid job; the Newsletter has been modestly named "PAEONIA". It runs articles really aimed for Breeders, elementary, intermediate and advanced. Technical problems are discussed, and the newcomers to breeding can listen in on the old pro’s as they tussle with the Ins and Outs of the Ito Cross — the peony world's latest dramatic break-through.

In 1970 and 1971 more people appeared, and in the Peony Bulletin for December, 1971, a list of the eleven new members of that season was printed. Last year, ten more brought the total list to over 100! 102 to be exact. Of course, some of these are more actual than others; some are even more potential than others. There may even be a few with No Interest At All. They will have to forgive this enthusiasm on my part. I trust that at any rate it has not brought them much Junk Mail.

Because my nursery was officially closed in November, 1972, there will be no more names, actual or potential, from this corner of the peony world. And because the list was ever only typewritten, and like a private club, was issued only for the benefit of those in it, I am of the feeling that it should now be printed. Certainly in "PAEONIA" and perhaps in the Society's Bulletin as well. The fact that not all are members of the Society is neither here nor there. Even though we do number 102, we are a long way from our nearest neighbor, and who knows, the name of someone, even in the next state, and even if only potentially interested, just might strike a spark of friendship and togetherness.

The task of arranging 102 names in neighborly fashion, as the first 50 were done, proved too great, however. So here we all are, simply in alphabetical order. And what use is a List without accompanying Statistics? Here are a few:

1 each, from France, Switzerland, West Germany and New Zealand
6 in Canada, from Ottawa to Saskatchewan.

All the rest are in the United States, From Massachusetts and New Hampshire to California, Oregon and Washington, from North Dakota and Minnesota to Natchez, Miss.
Twenty-six are women, including the Grafin (Countess) von Zeppelin; but not including "hidden" women (that wife, mother, or even daughter, working beside a man, urging him on, and tidying up after him).

Adams, Mr. A.T.
600 Cumberland Ave.
Jellies, Tenn. 37762, or
1451 Gulf Blvd, Bayside Gard.
Apt. 203, Clearwater, Fla. 33515

Anderson, Mr. Oscar W.B.
3 Braithwaite St.
Christchurch, New Zealand.

Armatys, Mr. Leo
Central City
Nebraska, 68826

Auten, Mr. Edward, Jr.
2148 Horace Ave.
Abington, Pa. 19001

Ballard, Mrs. Arlene,
Rte. 4, Box 86-A
Easton, Md. 21601

Banziger, Mr. Richard
R.R. 2, Box 209
Catskill, N.Y. 11414

Bartos, Mrs. Armand
778 Park Ave.,
New York 10021
(also Bridgehampton, N.Y.)

Bennetch, Mrs. Paul
303 West Maple
Langhorne, Pa. 19047

Bennett, Mrs. E. L.
1933 West Lawn Ave.
Madison, Wisc. 53711

Bock, Mrs. Claude V.
511 Conneaut Ave.
Bowling Green, 0. 43402

Briscoe, Mr. E. H.
Rte. 1, White Hall,
Illinois 62092

Burkland, Mrs. Charles
1131 Woodland Drive
Newton, Iowa 50208
Cazel, Mr. Fred L., Jr.
Gurleyville, Rte. 3
Storrs, Conn. 06268

Colmegna, Mrs. Valeria
6711 Ludiano, La Grillaia
Tessit, Switzerland

Cooper, Mr. Fred
49 Crownhill St.
Ottawa 9, Canada

Cousins, Mr, L. W.
472 Tecumseh,
London, Ont., Canada

Daphnis, Mr. Nassos
Gratwick Tree Peonies
Pavilion, N.Y. 14525

Darrah, Mr. Stewart
RR 1, New Haven
Missouri 63068

Dattilo, Mrs. John E.
11612 N.E. 133
Kirland, Wash. 98033

Dennis, Mr. George
415 W. Robinson St.
Harrisburg, Ill. 62946

Denton, Mr. Howard L. Jr.
7903 Springway Rd.,
Ruxton Baltimore, Md. 21204

Drake, Miss Frances
Box 474, Minnetonka
Minnesota 55343

Dumanski, Dr. John S.
180 Lexington Ave.
Passaic, N.J. 07055

Emery, Mr. Dara
Santa Barbara Botanic Gardens,
1212 Mission Canyon Rd.,
Santa Barbara, Calif. 93105

English, Mr. Caraeron
41 Citation Drive
Willowdale, Ont. Canada

Erling, Mr. Dan
1239 South 49th
West Milwaukee,
Wis. 53214

Fiala, Father John L.
7359 Branch Rd.,
Medina, Ohio 44256

Fischer, Mr. Hubert
Meadow Gardens, 63rd St.
Hinsdale, I11. 60521

Gilbertson, Mr, Ben
Kindred, N. Dakota 5305L

Goodrich, Mrs. Hunter
Cobb Isle, Water Mill
L. I., N.Y. 11976
(and Box 886,
Natchez, Miss;. 39120)

Guest, Mr. W. F. C,
245 Park Ave. (36th floor)
New York 10017
(also Old Westbury, N.Y.)

Guy, Mr. W, C.
Box 173, Aiken,
South Carolina 29801

Harder, Mr. Larry
Ponca, Nebraska 68?70

Harper, Mr. Allen
Top o' the Ridge
100 NE 81st Street
Kansas City, Mo. 64118

Helmling, Mr. Fred C.
8050 S. Rte. 88
RD 2, Ravenna, 0 44266

Hemphill, Mrs. Elva
1415 E. Florida St.
Springfield, Mo. 65803
Hertz, Mrs. Carl F.
RR 1
Nevada, Iowa 50201

Hochstein, Mr. David J.
1114 East 48th
Brooklyn, N.Y. 11234

Hollingsworth, Mr. Don
5831 North Colrain
Kansas City, Mo. 64151

Howard, Mrs. George C.
13511 Woodmore Rd
Mitchellville, Md. 20716

Hudson, Mr. David W.
PO Box 127
Amberg, Wisc. 54102

Isek, Mr. Joseph
6127 N. Monticello Ave.
Chicago, Ill. 60659

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8950 Given Road
Cincinnati, O. 45243

Janson, Mrs. C.H.
1206 NE 84th Terrace
Kansas City, Mo. 64155

Keister, Mr. Edwin C.
514 Arthur Ave.
Scottdale, Pa. 15683

Kirchner, Mr. Elmer
(U.S.A.F. ret.)
Rte 4, Box 136
Hillsboro, Oregon 97123

Kivell, Mr. Ivan E.
Rte 1, Greene,
Iowa 50636

Klehm, Mr. Roy G.
Chas. Klehm & Sons
Arlington Hts, Ill1. 60005

Kostiuk, Mrs. Muryle
Rte 2, Box 37
Harrah, Okla. 73045

Kozak, Mrs. Lois
8215 Branch Road
Medina, Ohio 44256

Krantz, Mrs. John
903 Fourth Ave., N.E.
Brainerd, Minn. 56401

Krupien, Mr. August
Bethmour Rd.
Bethany, Conn. 06525

Kuesel, Mr. Harry
Old Brook Gardens
19 Mary Lane
Greenvale, N.Y. 11548

Laning, Mr. P. Chris
553 West "F" Avenue
Kalamazoo, Mich. 49007

Livingston, Mr. G. A.
Windswept Gardens
Rte 2, Earlville,
Illinois 60518

Michau, Mr. Edward Lee
1412 N. Georgie
Derby, Kansas 67037

Modderman, Mrs. George
Alexander, Iowa 50420

Moldovan, Mr, Steve
Moldovan's Gardens
38830 Detroit Rd.
Avon, Ohio 44011

Morel, Dr. George
C.N.R.A.,
Rte de St. Cyr,
Versailles, France

Morgan, Mr. Ian
22 Holton Ave.
Westmount, 217,
Que., Canada

Mulligan, Mr. Brian
Univ. of Wash. Arboretum
Seattle, Wash, 98105

Muntz, Mr. A. Philip
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Fairfax, Virginia 22030

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O'Donnell, Mr. G. E.
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Lafayette, Colo. 80026

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Oak Ridge, Tenn. 37830

Reath, Dr. David
Box 251
Vulcan, Mich. 49892

Ricotta, Mr. George P.
95 Highland Ave.
Binghamton, N.Y. 13905

Riley, Mr. R. J.
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Mankato, Minn. 56001

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20 Vernon Terrace
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Ontario, Calif. 91762

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Scheele, Dr, Raymond
Woods Rd., Westbury
Long Island, N.Y. 11590

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5320 Oakes Rd.
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Schuster, Mr. Bernard
Schuster's Gardens
RFD 4, West Main St.
Platteville, Wisc. 53318

Seaman, Mr. Gary
Gratwick Tree Peonies
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1246 Donlea Crescent
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Smith, Mr. C. R.
9 Shore Edge Lane
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Smith, Willis J.
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Spangler, Mr. C. F.
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Stokes, Mrs. Robert
109 Benedict Road
Pittsford, N.Y. 14534

Stribula, Mr. John L.
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Bellerose, L.I., N.Y. 11426

Stuart, Mr. Robert
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Box 88, Stratham
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Syrovy, The Rev. Joseph L.
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Tranquil Lake Nursery
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East Norwich,
L.I., N.Y. 11732

von Zeppelin, Grafin
Laufen-Baden,
Post Muhlheim
West Germany

Wadekamper, Mr. Julius
Maple Lake, Minn. 55358

Wakefield, Mrs. G. K.
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Milton, Mass. 02186

Weber, Mrs. Nelva
510 East 84
New York, N.Y. 10028

White, Mr. Herbert L.
Box 264
Woodbine, Iowa 51579

Wister, Mr. John C.
Harvard Ave.
Swarthmore, Pa. 19081

Wright, Mr. Percy H.
407 109th St.
Saskatoon, Saskatchewan
Canada

LETTERS FROM OUR READERS - REPLIES TO "BLACKMAIL" ARTICLE ——

Dear Mr. Pehrson,
April 2, 1973

I am embarrassed and in truth elated to tell you that at last, after two years, I have a few peony seedlings. Three years ago Miss Saunders sent to me 3 hybrids - '**Sanctus**' x '**Roselette**', Quad F2 x '**Rushlight**', and No. 4992; last year she sent albi x lobata F2, Little Reds, Windflower, Quad F2, and a fertile early F2 macro hybrid. From the first three (I smear pollen, everything on everything) I got some seed, planted them immediately in a tub with a light mixture of perlite, peat moss and soil, at frost into the garage they went, watered enough to be moist, not wet — and last month they came up — 12 mixed hybrids (I hope). I know I am not being very scientific but my knowledge and experience is that of a beginner — any direction you might wish to give to me would be greatly appreciated, and followed.

I have a small garden in Brooklyn but use my friend's acre in Connecticut for my seedlings — 500 daylilies get planted out next week. The peonies (seedlings) I'll keep here for another year, and move out in '74. Any spare seed, seedlings, or plants you might send would be a delight to receive.

From one Taurus to another (I was born on the 16th of May), may I wish you not a happy birthday but a happy everyday.

- David Hochstein, 1114 E. 48th St., Brooklyn, New York, 11254.

Dear Roy -

Thank you for making this Paeonia possible. I have been reading the wrong book — "Peonies Outdoors and In" by Arno and Irene Nehrling. Today I will send for the book you suggest by John C. Wister. I know very little but hope to be learning and doing some planting soon. In the meantime, Happy Birthday.

- Celeste G. Bartos, 778 Park Ave., New York City, N.Y. 10021.

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LETTER TO CHRIS LANING FROM BILL SEIDL

April 26, 1973

Dear Chris,

Who would ever think that the hi-lite of the peony season would come in late March?! But the receipt of Dr. Tod's seeds from a mloko-delvayii hybrid was just that. Five seeds were put (March 28) in damp vermiculite compressed firmly around the seed, with the intention of obtaining "quick" germination, and kept at about 65-70 degrees. The other 12 were left in the loose, barely-moist vermiculite and the see-thru bag you mailed them in, the intention here was merely to keep them from drying out until they were planted outdoors in June. Last week (April 22) I looked at the five and found one with a long root (an inch or more), the other four in various beginning stages of root growth. The real surprise was the other 12 — three had long roots and a couple others were beginning to grow roots. I suppose I should've known from Roy's many descriptions of the "quick germination" method that loose vermiculite was a suitable starting medium. I had always compressed the vermiculite around the seeds in pots of some sort. This makes it a chore to investigate whether germination has begun and to what stage it has progressed. As I see it now, the damp vermiculite in the closed plastic bag is needed only to insure a high humidity; the seed could rest on top of the vermiculite and, without any handling of the bag, germination could be observed. Very convenient.

I really didn't want to chance more than five seeds to the quick germination method because in the past I've not taken the extra pains to give them the close attention they demand and lost quite a few. And I didn't want to lose any of these mloko-delv seeds thru careless attention. I'm not sure what the next stage should be; 3 of the 4 seeds with long roots have been refrigerated at about 35 degrees. I'm hoping they will sprout by June or early July and that the remaining growing season will be long enough to permit development of a root and dormant eyes that will survive the next winter season. Of course, some suitable protection from hard freezes will have to be devised.

At any rate, many thanks for remembering me when distributing Dr. Tod's seeds. I suppose no one knows yet the true value of these seeds but they could well be (if they are of the reported parentage) of even more significance than the Ito hybrids or Ito-type hybrids (diploid herbaceous x triploid lutea hybrid.) inasmuch as sterility appears not to be a problem. Doesn't it appear that diploid hybrids are involved here? And if so, would they cross with all those beautiful lactis we have now? What an inducement that would be for the non-hybridizer peony-lover to take up hybridising!

I don't know as you owe me anything, especially after sending those mloko-delv seed, but since you asked about what plants you had (PAEONIA, #-4:II) that interested me, I must mention one — the red 16350-F3. This attracted my attention because of its color and parentage. I have no red tetraploid hybrids (not counting the lobata or lobata-offici hybrids). With respect to parentage, I also have a 16350 seedling (labeled an F2, from Silvia S.) that's always bloomed as a single fertile light pink, but last season it came double (actually semi-double; it looked double but had stamens interspersed). If you can spare a few eyes next fall, I'd like to

cross the two. Maybe you'd like a piece of my 16350-F2; I divided it last fall but can divide again. My Itos are all showing a good increase in clump size and could be divided ... if you want some others besides '**Yellow Dream**'. All four are very similar and none of the four has set seed (pollinated by '**Moonrise**', etc.) and — you asked about pollen production and fertility — I've never noticed a single grain of pollen on any of them. Maybe this will change when they are well established. Although "clumping" well, none of mine has been in one place for more than three years and many stems in a clump are often "blind", not producing a flowerhead. These have always bloomed shortly after the national show; but this year with a slightly later date, I'm hoping to exhibit some blooms.

You have also mentioned that you have '**Tria**', Saunders F2A, Daphnis hybrids 294, 253, 222, 293, 324, and '**Gauguin**' II. You offered scions but I don't know how to graft. I've grafted apples, pears, lilacs, etc, but never peonies. Of course I've read how-to accounts in The Peonies. Perhaps I'll experiment with some of my own stock next autumn to gain some first-hand experience before I ask you for scions. By then you will have more top growth. I have Daphnis hybrids 222, 223, 224, 324, and '**Gauguin**' II. You'll note three are the same as yours. I do not know the parentage either. All bloomed last season but none set seed or, as pollen parents, seemed effective. As I recall, 222 is greenish-cream, 324 is similar but larger (both have about ten petals); '**Gauguin**' II is light yellow heavily flushed dark rose deepening to almost black flares or a solid dark center, about ten petals.

In your last letter you asked about my Ito-cross attempts. I've made in the neighborhood of 100-200 attempts for the last two season (each season). This may sound crazy but both seed crops are still in storage. Can't make up my mind if I should keep all the different crosses separate (a very discouraging task) or throw 'em all together... equally discouraging; why make separately-labeled crosses if the seed is mixed in the end? I need to compromise somewhere. Perhaps I've already discovered what was meant to be discovered; no one lutea hybrid seems to be particularly effective. Actually, the pollen I've used least is that of '**Alice Harding**'. This coming season I should have two blooming size plants in bloom and so I may have a good fresh source of pollen.

Enclosed is my promised explanation of why certain attempted Ito crosses were successful and many others failures. Hope to see you in Milwaukee.

- Bill Seidl

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ITO-CROSS CONTRADICTIONS EXPLAINED

By Bill Seidl

Since our hard-working editor has trouble reproducing Japanese characters, this explanation will be in English. (Actually, Chris, those "words" were a bunch of made up turkey-tracks which, presumably, would not make sense even to a Japanese).

Before revealing my explanation outright, let me recount briefly the story of the two known successful Ito and Ito-type crosses to date, exaggerating (perhaps) those aspects that seem especially puzzling or contradictory. In that way, the same explanation may suggest itself to you before I spell it out.

> Mr. Ito's assistant brings from a distant prefecture a single bloom of '**Alice Harding**' and pollinates x number of blooms of '**Kakoden**'. Now '**Alice Harding**' does not produce pollen in the same quantity like, say, '**Moonrise**' produces pollen. In fact, by comparison, it's downright stingy; so you know "x" represents a smallish number. Yet nine true hybrids result, even more than one from the same seed pod. Duplicate crosses in later years are complete failures.

Roy Pehrson collects pollen from various lutea hybrids at a national show, mixes the pollen, and pollinates 582 blooms of various lactifloras. About 60 true hybrids eventually appear. Subsequent crosses, practically zilch, although there are scattered successes of one or two.

For Roy's crosses, since the pollen was mixed, the first thought that comes to mind (recalling Ito's initial success) is that the potent pollen in the mixture may well have come from a single bloom. Of course, Roy could not obtain again a similar unique bloom. But Mr. Ito could, having used pollen of a named variety. Yet when he did, '**Alice Harding**' subsequently proved a fizz.

The explanation? -— it's contained in the word "unique". Both of these men, when they were successful (coincidentally, on their first try), were using pollen of unique, perhaps one-of-a-kind, flowers, that is, a flower that arose from a bud-mutation. This mutation affected not the appearance of the flower but its chromosomal makeup so as to allow compatibility with lactifloras. The twigs or branches that arose from these bud mutations probably no longer exist, having died or been pruned away to be replaced by fresher, more vigorous, normal growth. On the other hand, if buds from these mutated branches were used in grafting to produce new plants, these new plants would produce nothing but these now-no-longer-unique blooms, But who would know it? Perhaps the entire plant producing Ito's first-used A.H. blossom was unique? it may have been a grafted plant, the scion with its mutated bud having been taken from a plant exposed to the radiation of the atom bombs dropped on Hiroshima or Nagasaki. In later attempts, Mr. Ito's assistant did not take blooms from this unique plant.

Of course, if one does not have one of these unique blooms or plants, you can still be successful but THEN you have to WORK and make hundreds of crosses to obtain one or two true hybrids. This would account for the limited success that Roy has obtained by using Corsair or Thunderbolt pollen.

The point may be made that bud mutations occur too rarely to account for the two singular successes described. Although not common, they are not all that rare either. There are commercial apple and rose varieties that arose from bud mutations. Certain gladiolus varieties (Picardy, Elizabeth the Queen, Burma) have mutated or sported (from bulblets) a dozen or more times. These are just mutations that were noticed because visible characteristics were affected. There must be many more that have gone unnoticed that affected invisible traits, for better or worse, such as health, hardiness, or ..... chromosomal makeup and behavior of the parent organism.

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ANOTHER "BLACKMAIL" LETTER —

To - Chris Laning April 8, 1973

Just a note of appreciation for the excellent "Paeonia". My good friend, Muryle Kostiuk gave me a subscription for Christmas and I find it most interesting. Being retired now, I can devote a lot of time to working with peonies. Muryle gave me a nice selection of seeds from her crosses last summer and I have them planted in cat food tins (with the bottoms cut out) — as per the enclosed listing. Some of the approximately 200 seeds were my crosses. Quite a few of them are up a couple inches now, mostly '**Roselette's Child**', '**Hit Parade**', '**Rushlight**' F2", Species 12-812", '**Moonrise**', "Quad F2" and one "Hotsu Hinode". Rather surprised me, since some seeds Muryle gave me three or four years ago just showed up this year. (I had already planted a daylily and some iris on the spot, thinking the seeds were sterile!) — and here are these tiny peonies trying to grow right in the middle of them.

Would be quite happy to have some seeds this autumn as per the "blackmail" item in Paeonia. Began gardening here in 1950, so I'm rapidly running out of space, but Muryle has promised to take many of my plants to her acreage, so I can try something new. Thanks again for the informative Paeonia.

- Jeanette S, Dunlop, 513 S.W. 50, Oklahoma City, Oklahoma 73109.

P.S. Is the peony variety named '**Jeanette**' available commercially? Or do you know? It intrigues me, being my first name, and I would .like to have a plant just to see what it looks like, if nothing more. It was mentioned in your listing of the Saunders' Lacti-Lobatas.

Dear Mr. Laning, April 14, 1973

I'm sending you my $2.00 dues and my accounting of my favorite pastime.

My interest in peonies began eight years ago. A neighbor across the street had a lovely white tree peony I was fascinated with. One day I was quite anxious to get a glimpse of its huge blossoms. My son being newly born, I didn't want to leave the house, so I got out our binoculars and began focusing. All of a sudden something blocked my view — I jumped — a bit startled. Our friendly mailman stood right before me shaking his head in disbelief, scolding me. After a convincing effort to explain my actions, I decided he never would believe me, but I'm sure you will.

That Fall I ordered three tree peonies and during the winter we were transferred to Houston, Texas, having to leave the peonies behind, A real disappointment!

Being back in the Midwest again, we've established these plants;

3 White Japanese Tree Peonies (Here is my greatest interest, also my biggest failure. I've lost six
2 Pink Japanese Tree Peonies plants. Anyone having a special formula for their success, please pass it along.)
1 Lutea Hybrid Tree Peony
5 Herbaceous ('**Laura Magnuson**', '**Carolina**', '**Cream Delight**', '**Great Lady**' F2, 4992)

Last year I gathered about a dozen firm seeds from '**Carolina**' and '**Cream Delight**', using pollen from a white tree peony. They were carefully planted, only to see our son's pet hen scratch them up and feast herself. This year the chicken is confined, but the late frost this week hasn't helped my plans. Maybe next year!

The advanced generation lutea hybrids and Ito type crosses receive my attention. Enjoy reading of everyone else's crosses and especially Roy's pictures.

Jackie Janson
1206N.E. 84th'Terrace
Kansas City, Missouri

Dear Mr. Pehrson:

I have just retired from Dept. of Agriculture, where I worked for over thirty years. I have bred daylilies and iris (bearded, spurea and Siberian) for 28 years. Lately I have become interested, in breeding peonies, particularly hybrids. I have a greenhouse.

I would be interested in your offer in the "Paeonia". I would be particularly interested in working toward yellow and white. The following is a list of hybrids I have now: '**Laddie**', '**Salmon Glow**', '**Commando**', '**Great Lady**', '**Reward**', '**Brightness**', '**Black Monarch**', '**Golden Glow**', '**Flame**', '**Paula Fay**', '**Red Charm**', '**Ludovica**', '**Burma Ruby**', '**Gillian**', '**Prairie Moon**', '**Henry Bockstoce**', '**Firebird**', '**Rosalie**', '**Carol**', '**Postilion**', '**Victoria Lincoln**', '**Red Red Rose**', '**Rose Tulip**', '**Alexander Woollcott**', '**Coralie**', '**Laura Magnuson**', '**Moonrise**', '**Cytherea**', '**Lustrous**' , '**Julia Grant**', '**Papilio**', '**Rushlite**', Saunders Fertile White, Saunders (albi x Lob x 10) and '**Little Dorrit**'. I have an abundance of space and considerable time. Send what you think I should have. Do you have a price list (especially breeders and species), if so please send.
Enclosed please find $2.00 for annual dues to "Paeonia".

H. E. Briscoe
Route 1 White Hall
Illinois 62092

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Dear Mr. Pehrson: April 26, 1973

My good friend, Leo Armatys, sent me a copy of "A Bit of Black Mail" from "Paeonia" and asked that I write you. Leo has been so generous and helpful to me that I am happy to write though I doubt the value of the letter to you. However, I am enclosing a copy of a letter I wrote sometime ago to Leo that expresses some opinions that I still hold. (ED: LETTER WILL BE PRINTED IN SEPTEMBER "PAEONIA")

I have been raising and propagating rhododendrons, azaleas, etc., for about fifteen years, just for pleasure — not commercially. Before that were roses and now I am trying my hand at raising tree peonies, though not doing too well. I got off to a bad start but that is another story. Fortunately I heard of Leo and he has come to my rescue so I do have hopes of success.

Because of the expense of tree peony plants and my ability to propagate from cuttings, I thought I would attempt propagation of tree peonies from cuttings. I explored tissue culture — running into an apparent or supposed dead end. Last summer I tried sweat box propagation with indolebutyric acid, bottom heat and lights — no success. This summer I will work with misting, it having been suggested by expert propagators to be the most likely successful method. I am hindered by having very limited material with which to work. I just don't have enough for controls, to experiment with various strengths and types of rooting hormones, with or without bottom heat, with or without heels, etc. Under any circumstances I will grope my way along and if I am lucky enough to hit upon a dependable method of propagation from cuttings I will have made a contribution to tree peony lovers as tree peonies are magnificent plants.

I enclosed $2.00 to get on "Paeonia" mailing list.

Sincerely yours,
Don J. Jenkins
P.O. Box 192
Brevard, North Carolina 28712

PAEONIA

Volume 4, No. 3 September, 1973

REQUIRED READING –

1. "The Peonies" by John C. Wister, $3.50 from American Peony Society.

2. The Bulletins of the American Peony Society.

The PAEONIA is authorized by Miss Silvia Saunders.

Our leader and teacher in hybridizing is Roy Pehrson.

Editors are Chris and Lois Laning,
553 West F Avenue, Kalamazoo, Michigan, 49007.

TABLE OF CONTENTS

DACTHAL

by Roy Pehrson

Previous to this past season, I had never used a pre-emergence herbicide in my peony plantings. I had just never seemed to get around to doing it during the weekends when I was home.

This past spring I obtained a 50 pound bag of Dacthal and applied it at about the recommended rate immediately after a good cultivation with the tiller. This was the granular formulation. It is also available in a soluble form for spraying. I don't remember just when it was done, but the peonies were well emerged but with growth not very far along.

It was a wonderful labor saver. I did not use the tiller again on these areas the remainder of the summer. There was no harm at all to the peonies.

I guess I had never appreciated just how much of a nuisance the annual grasses had been in the past. Bristly foxtail, green and yellow foxtails, crabgrass and giant foxtail had been the worst offenders, in about that order. They were almost perfectly controlled, though I now find a plant of crabgrass here and there. Pigweed has always been quite a pest. None at all showed up for at least six weeks, but then a "second" germination appeared along with some purslane. Not wanting to destroy any effectiveness which might still remain, I did not till again. Instead, keeping a hoe very well sharpened with a file, I just shaved the now pretty well packed surface. It was not a big chore. Obviously Dacthal does not have full season effectiveness against all annual weeds, but I am very well satisfied, I have never had so clean a peony patch, though my battle with quackgrass must still go on.

These are the weeds which were controlled either very well or completely. The annual grasses mentioned, pigweed, lambs quarters, purslane, shepherds purse, dandelion (seedlings), ragweed. It did not do so well with prickly lettuce, but I think it's possible that there may already have been small germinated plants of this, close up in the rows at the time I applied it.

I am sure there are other herbicides which would work well. The big chemical companies are very competitive in their research, for the farmer market for these materials is an immense one. If I should have any difficulty obtaining Dacthal any time I probably would try either Amiben or Treflan, for these two are used in very large quantities by the farmers in this area.

Some of you may have experience with these or some other materials. If so, won't you please give us an account of your results? …Roy

SELF – INCOMPATIBILITY

Roy Pehrson

Self-incompatibility is something which needs to be of no concern to one who is hybridizing peonies, since it occurs only in pure species plants, and possibly only in those plants which are nearest to the true "wild" condition. It WOULD be an annoyance to someone who has a species plant which he would like to increase faster than would be possible by division of the plant he has.

Because of the relative unimportance of self-incompatibility to us in our activities, this treatment of the subject will be very superficial. Anyone with a real wish for a more complete understanding of the subject will read about it in his favorite textbook. I don't know where the best treatment of the subject is to be found. In his "PRINCIPLES OF PLANT BREEDING" (John Wiley and Sons), the author R. W. Allard devotes nearly six pages to this topic; enough to give a fair treatment of this rather complex subject.

The reason for the existence of incompatibility is of course to prevent inbreeding in those kinds of plants which have evolved this method. Several thousands of species of plants are known to prevent inbreeding by incompatibility systems and very many more have not been tested. There are also many kinds of plants which suffer no harm from inbreeding, and in some of these self-pollination is the normal method of fertilization. The tomato is just one example. Then there are plants which defeat the possibility of self pollination by having flowers of such elaborate construction that selfing by any means is impossible, but still permitting crossing by insects or other vectors. Still other methods are known.

It could very well be that the peony is one of those plants which has been studied for incompatibility. Since I don't know about this, if true, I shall just assume that the system used by the peony is the one termed the "gametophytic" system. The following is lifted bodily from the Allard text: — "In this system incompatibility is controlled by a single gene, S, which is usually characterized by the very large number of allelic forms in which it exists. In the gametophytic system, pollen tube growth is usually very slow in a style that contains the same allele of S; consequently plants are virtually always heterozygous at this locus. The situation of two alleles with gametophytic control and no dominance is, of course, impossible because all plants would be incompatible and the species sterile".

Now for the purpose of illustration let us make an assumption. Let us guess that the species *P. mlokosewitschi* possesses 20 alleles of the incompatibility gene S. These could be denoted S_1, S_2, S_3, S_4 $\cdots$ S_{20}. Now let us say that the clone we may happen to have has the first two of this series. Since both the style and the pollen tubes would have the genes S_1 - S_2, pollen tube growth would be very much slowed and fertilisation would seldom occur, even though the receptivity of the egg cell is in no way reduced by the existence of those incompatibility genes. If we should now purchase another plant of *P. mlokosewitschi* to cross with the first one, what might happen? There are several possibilities. First of all it could happen that the new plant is just another division of the same clone that we had before. This could happen even if we purchased it from a different supplier. The two plants would not really be different plants at all and crossing them would be no better than before. With a little luck we might get a different clone; say one with the genes S_1 – S_3. If we were to cross this plant with our former one, the pollen tubes with the S_1 genes again would not get through but the S_3 genes would. We would then get a half-crop of seeds. Half of these would be S_1 – S_3 and the other half S_2 – S_3. These siblings in turn could be half fertile if intercrossed.

If the new plant we have just purchased,, instead of being $S_1 - S_3$ should happen to be, say $S_5 - S_{16}$ our two plants would now be freely interfertile just as in a colony of plants in the wild.

Just for fun we should consider yet another possibility. What if our proud owner of the $S_1 . S_2$ plant (or any other) should be an obstinate type and. think to himself, "I'm gonna wait for the few seeds I will get from this plant and develop my own freely fertile strain from it. Well, it COULD be done. The few seeds from self pollination should be $S_1 . S_2$, $S_1 - S_1$ or $S_2 . S_2$. The two last of these should intercross freely but nothing else would work. He could mix all his pollens to discover those plants which would set seed. The old mama plant would, of course, be as poor a seed maker as before.

To get a freely fertile strain, where all plants would seed generously would require more than just those two incompatibility alleles. Allard puts it this way: — "Regarding the cross compatibility of sibling matings and general cross compatibility in a population, all that need be said is that with triallelic control only half the matings are compatible, whereas with multiallelic control, cross compatibility rises rapidly as the number of alleles increases, exceeding 90% with five or more alleles. All the incompatibility systems are therefore efficient at preventing selfing, and the multiallelic systems in particular are seen to be efficient at allowing all or nearly all plants, even in small populations, to set a good crop of seed."

As stated at the beginning, unless for some reason you should wish to propagate some rather rare species more quickly than can be done by division, then this discussion has no practical implications for you. It may however assist you in understanding just why it should be that your plant of mloko, of lobata, or of some other species, makes seeds so very poorly to its own pollen. Incompatibility should never be confused with sterility in its many forms. The two things are not synonymous at all.

Editor’s Note: In "THE PEONIES" by John C. Wister, see page 52 - Albiflora x Emodi.

PEHRSON'S PROBABLE POLLEN PROBLEM

Roy Pehrson

I would like to tell about an experience I had with *P. mlokosewitschi* this year. I have suggested elsewhere that mloko makes a self-set seed or two only infrequently. Other pollens I have tried on it have not worked either.

Some years ago Silvia sent me a wisp of a plant, saying she did not know for certain what it was. She had been calling it "pink" mloko. I planted it sort of in the shade of a large peony clump hoping to nurse it along to a better size if it should have a will to grow. The plant has lived, but has been very slow to increase in size. This year it had a single small bloom. Looking at the small plant for several years it seemed to me that the foliage was almost identical with that of mloko except that the leaves were distinctly wider. I wondered if it might be the plant described in "The Peonies" as *P. daurica* or *P. triternata*. This plant is said to be very closely related to mloko and to be completely inter-fertile with it.

I could not be very confident of this identification for the reason that Silvia herself had taken a picture of *P. triternata* for "The Peonies". Nevertheless, when that bloom appeared I used its pollen on most of the blooms on my plant of mloko. The result was very good. I got 29 very nice seeds. Three or four blooms not pollinated gave nothing.

I think I shall now have to believe that this plant should be called either *daurica* or *triternata* depending on whose system of nomenclature is accepted.
Sorry 'bout that Silvia!

Editor's Note: - Roy, I suppose you will call it what you wish but I believe your *daurica* is *P. mlokosewitschi.*

I have one *daurica* and one mloko and they don't look alike. You just can't confuse the two! Miss Silvia is right.

Sorry 'bout that!
* * * * * * *
Mr. Dara Emery of Santa Barbara Botanic Garden sent me a packet of *P. mlokosewitschi* seeds which were obtained from U.S.S.R.

These seeds were received in May or June. I planted all of them and find that some of them are rooting. Will they produce yellow flowers — set good seeds?

WHAT IS PAEONIA MLOKOSEWITSCHII?

(From an unidentified garden magazine)

According to the late Sir Frederick Stern's invaluable STUDY OF THE GENUS PAEONIA this distinctive species was discovered by Mlokosewitsch in the eastern central Caucasus in 1900. It grows in a very limited area. The specific name is a little difficult to pronounce and some gardeners prefer to call it, most inappropriately "mossy whiskers".

It is one of the few species with yellow flowers, and distinguished from the rather similar *P. wittmanniana* by its much narrower leaflets. The leaflets of *P. mlokosewitschii* while having a tapered base, broaden out and are bluntly rounded towards the apex, with usually a very small pointed mucro. They also have a distinct, attractive, coppery tinge when young.

I first saw this splendid plant in flower at the Birmingham Alpine Garden Society show in 1938. In December of that year a plant arrived from the exhibitors, the firm of Bowell and Skarrat. Those who believe that nurserymen today are not what they were will receive confirmation of their view when I mention that in my notebook it is recorded that the plant had 16 "snouts" (growth buds)!

It was said to be a peony that would do well in light soil, and this proved to be so. It flowered in the first days of May -- rather paler than the original plant seen.

My plant produced masses of quite startling vermilion seeds — or so I thought. These were duly sowed. Nothing came up. I discovered later that these were infertile seeds; the fertile ones are plump, rounded and glossy purplish black. The effect of the pods, with this mixture of colours, is one of the pleasures of the plant, and is a characteristic of other peony species. The pods burst open in late July and remain decorative until well into September.

This peony became very popular but has become very difficult to obtain. My own plant produced seed only intermittently, so I bought a packet of seed offered by a well-known firm. Seedlings came up well. I noticed that the upper surface was hairless while on my plant it was somewhat downy — otherwise, it was typical.

When they eventually flowered, the colour was surprising. Instead of yellow it was white, flushed in varying degrees with crimson, veined also with that colour. No reference that I could find mentioned any colouring other than yellow, which indeed seemed to be one of the distinguishing features of the species. However, the showy fruits were duly produced and later, self-sown seedlings appeared which have not yet flowered.

In the meantime, I had sown seeds from a known true yellow. In 1967 they flowered. One had small crimson flowers — a considerable surprise. The others were creamy, in some cases margined with pink. The foliage was typical.

Is this a usual happening? I have not seen it mentioned. Are a number of "mossy whiskers" now in cultivation, not the real thing, but hybrids?

The only reference I can find to hybridity is the account of the long series of breeding experiments made by A. P. Saunders published in THE NEW FLORA AND SYLVA of July, 1933. Working with 31 species (some are not now so regarded, though they differ from the gardener's point of view), he was only successful – and then in several cases with difficulty, in obtaining *P. mlokosewitschii* crosses with lobata '**Otto Froebel**', *macrophylla, tenuifolia, triternata, woodwardii, anomala* and *arietina*. From none of the resulting plants had he been able to obtain seedlings. Perhaps some readers may be able to throw light on this interesting problem.

Editor's Note: - Mloko x tenui and mloko x macro crosses have produced seedlings — making the quads possible.

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PAEONIA LOBATA

Roy Pehrson

All peony hybridizers are probably familiar with the account of the wonderful success Prof. Saunders had with the use of the plant of *P. lobata* which he obtained from Amos Perry of England. These hybrids are all characterized by a warmth of coloring which had not been seen in any hybrids previously. They are much admired and much wanted as a consequence.

Saunders had used other plants of lobata too. One of these, No. 5267, he described as a deep crimson in color. A good many seedlings were grown, but with much less success. The very few selections made were not like the others in color.

Miss Saunders has stated that the original Perry clone no longer exists. This would be unfortunate for hybridizers if the Perry plant had been totally unique. It is now certain that it wasn't.

Several years ago hybridizers began to believe that the new colors in the Saunders' lobatas was due to a yellow dye which blended with the usual peony red to produce those truer red colors and those fine warm pinks. Fred Cooper extracted the color substances from the petals of a Saunders hybrid and by a paper chromatography test determined that a yellow dye was indeed present. He found it too in the petals of a species lobata plant. This result proved beyond a doubt that lobatas are still available which should be equally as good as the Perry clone. It should therefore be possible to use lobata blood to produce yellow hybrids if only the yellow and

the red could be separated. But before proceeding with this reasoning it should be mentioned that the lobata hybrids produced by Glasscock ('**Flame**', '**Sunbright**', '**May Delight**') show the same yellow influence as those of Saunders. The pollen parent of these is given as lobata Sunbeam. It must be supposed that Sunbeam then also is much like the Perry clone genetically and that this type is not too rare in the species.

To resume the argument, the red color did drop out in the case of the F2-'**Moonrise**'. To my eyes this one is not very yellow, but as it is often called a yellow the color must be present. Breeding results have now shown this as very probable. David Reath has announced a good yellow, one parent of which was '**Moonrise**'. I bloomed about 20 seedlings of the cross "Quad F2 x '**Moonrise**' F2, and among these there were two which were noticeably yellow. One was scarcely deeper in color than '**Moonrise**' itself, but the other seems identical in color to *P. mlokosewitschi*. Then too, the variety '**Prairie Moon**' is said to come from '**Laura Magnuson**' (a lobata seedling) x '**Archangel**'.

These hybrids all involve the use of a second parent which also contains a trait for yellow color. In my own cross, genes from lobata, mlokosewitschi and macrophylla are all present. I shall not here explain why it seems certain that macro has genes for yellow, but I have other evidence which convinces me it is so. The best possible way to get light yellows then seems to be to combine all three species through the use of hybrids which contain them. The advanced generation Quads may be the best of all to use as one parent. There are other good possibilities of course. It is tempting to think of Nova as the best prospect of all, but there seem to be difficulties in using it.

Saunders also made crosses of lobata onto various double forms of Officinalis to produce his four "Little Reds". These seem to have been used by Mr. Cousins in developing his "Inner Glow" hybrids. This fact may suggest a program of breeding someone may wish to try. Aside from the two kinds of crosses mentioned, Saunders appears not to have used lobata in any other crossings. If he may have done so there is no record of it in his "Big" notebook.

There are two excellent reasons why a beginning hybridizer with a reasonably large garden space might like to try the lacti x lobata cross.

1. It is the easiest cross possible. Seed production is very large.
2. The hybrids are all nicely colored and it may be possible to obtain seedlings comparable in quality to those of Saunders.

P. lobata itself may be a little slow becoming established. In addition it does not bloom very early in the season. These facts may limit somewhat the use which can be made of it.
As for hybrids containing lobata blood; well, the possible crosses are almost endless, so try almost anything which comes to mind. Crosses of opportunity have a disconcerting way about them, often producing more interesting seedlings than those which were (intelligently?) planned.
P. lobata also made a nice crop of seeds this year (1973) — 52 of them. I had used pollen of the "little red" '**Scarlet Tanager**' on it. If these should grow well they might make plants which would make good alternate pollinators to lobata for use on lacti. I think I have only two small seedlings of lobata from self pollination.

PROGRESS REPORT - "ITO" HYBRIDS

Roy Pehrson

Chris has found it needful to nag me a little bit to write something about what has happened with these hybrids in the past year. I have not been very keen about the idea because there has been nothing significant. None has bloomed, and that of course is what concerns us the most. We want the flowers to be comparable to the lutea hybrids in quality of bloom so that all peony lovers will want to have them. We also want them to be sufficiently herbaceous in habit — blooming regularly from below-ground buds, so that growers in the coldest areas can handle them easily. Along with this, of course, we would like to hope that there might be a considerable range of variation in flower form and color. Finally, and over the long term the most important perhaps, we would like to find in them at least some slight fertility so that a breeding strain can be established. After looking at stems and foliage hundreds of times over several years one becomes a little sated with this. At this stage only the appearance of some flower buds will bring back the old excitement in full force.

Two of the plants, if nothing disastrous occurs, should certainly bloom next year. A few others may do so too, but these two differ enough from all the rest so that they deserve separate mention. For this account I'll call them "A" and "B". Both of these are more herbaceous in appearance than any of the others.

"A" has increased greatly in size of plant over last year. The rather big leaves on its three stems, a foot or more in height, have made this an attractive clump almost two feet in height. There was one of those tiny pinhead abortive buds on one of these. The medium light green leaves are decidedly of tree peony outline and are softer in texture than almost any of the others. The stems are apparently a bit less woody and have just a little tendency to make an aboveground dormant bud.

"B" has also increased very well in size as compared to last year. Stem quality seems very similar to that of "A". It also had a tiny bud. It too has softish foliage, but nothing at all like "A" in outline. There is only the slightest suggestion of the tree peony shape of leaf, yet its hybridity is unmistakable. It is something like a well constructed teenager trying to disguise herself in men's clothes. The message gets through anyway. This one seems even more herbaceous than the other one.

All the rest of these which have grown big enough to partially evaluate appear to be much of a kind, with strong leanings toward the tree peony pattern. Thus far most of these are much shorter in stem. Some have shown no stem at all yet. Most have made growth from only one to three below-ground buds, but there is one super vigorous plant which has nine very short stems. Finally there are just a few which have not taken hold at all yet, and may actually be weaklings. Time will tell.

I had a bit of bad luck with two of the smaller ones. They were cut off by climbing cutworms — one of them three times, and they finally gave up the effort. I hope they may show up again next year.

Last fall I noticed that one of those of "average" type had made about three dormant buds right at the surface of the ground. Although I did no covering at all for winter protection these buds survived. I lost no plants of this cross despite the near absence of snow last winter.

At a peony meeting a few years ago one of our number suggested that since the Ito hybrids are prone to make buds close up to the soil's surface, that they be planted deeper than other peonies. The idea was to protect these buds. Well, peonies have a remarkable ability to adjust

themselves and they would not accept this indignity. Nevertheless I agree with his suggestion because I think that in adjusting to the deeper planting, the crown structure of the plant would be modified in a way that would make division easier at some later time. Although I am doing this when setting them in a permanent spot I was a little baffled by a nice plant I lifted out of the "kindergarten" row a few days ago. This plant had a whole slew of small buds starting almost at the ground surface and extending fully four inches deeper. I planted it a little deeper than it had been anyway. I don't think it will mind!

This just about covers what has happened with the plants which are more than a year old. Now how about the plants obtained from last summer's crosses?

Well, the whole situation is filled with so many uncertainties that I don't know what I have. At the time in early summer when these hybrids are most easily recognized I thought I was able to identify ten new ones. True, only three of these had that leaf and stem coloring derived from suffruticosa which makes identification certain. Then two of these failed so that I have only one for sure; a seedling derived from pollen of '**Regent**' sent to me by Mrs. Howard of Maryland. It's a nice little plant. Others are very uncertain. There are, for example, about five seedlings supposedly '**Golden Dawn**' x Ludlowi. They may or may not be real hybrids.

Since I may have lost two of the older ones to climbing cutworms and since I may have as few as one or two new ones, it would be best to guess that I still have a total of about 60. The effort will continue.

NEW SEEDLING EVALUATION

Roy Pehrson

Each hybridizer will discover sooner or later that real "world beaters" in a seedling population are quite rare; a "gift of the gods". Consequently he must set his own standard of excellence at such a level that he will have something to save and to look at again from each year's crop. Although no seedling should be named and registered unless it is superior on one or more counts to the most nearly comparable variety in the trade — or happens to be of a new and novel type — such a standard is too restrictive. Many very nice seedlings will come, and who knows; maybe in time something or other will prove to be better than it first seemed to be.

There were a few interesting seedlings this last season, all of which must be looked at again. I'll describe a few of them —

1. '**Mikado**' x '**Good Cheer**'. This from the use of a smidgen of '**Good Cheer**' pollen sent me a few years ago by Silvia Saunders. There are about 20 seedlings; about half of them 4 years old, the rest only 3 years — delayed germination. The single stemmed plant, only four years old had a double bloom. It is hazardous to predict from so young and small a plant, but it could go like this: the flower form seemed exactly like that of '**Red Charm**', but it's hardly likely that it will be as big. The color is a trifle lighter and more sprightly. It may have a little lobata influence to account for this. The stem apparently will be quite heavy and very stiff. The foliage certainly will be much better than '**Red Charm**'. I'm very high on this one, but two more years will probably be needed to evaluate it. If it can not make a place for itself I think it will only be because of too great a similarity to '**Red Charm**'.

2. '**Tokio**' x '**Nathalie**'. A genuine hybrid I feel sure, A rather nice pink Jap on a stem of moderate size, but perfectly adequate to hold the bloom erect. Somewhat shorter than medium height but yet not a dwarf. If the bloom and stem are not good enough to justify this peony, the foliage may tip the balance. To me the foliage is the most attractive in the whole garden except for '**Eclipse**'. A very neat landscape type. Bloomed last year too on a 4th year plant. It is seed fertile.

WINTER PROTECTION OF LUTEA HYBRIDS

Roy Pehrson

Because the winter here in Minnesota, from the first of January onwards, was the mildest in my memory, I have been reluctant to describe how I managed to overwinter the above-ground parts of some lutea hybrid tree peonies last winter. I read through our list of members and found about ten or a dozen who live in parts of the country where there might also be difficulty with winter damage of these plants. Possibly some of these people might be interested in trying the method I used, on the chance that my success was not due entirely to a very favorable winter.

Lutea hybrids appear to be quite root hardy here. They freeze back only to ground level or slightly above. Why, I wondered, should this be so? Surely the soil should get just as cold as the air during prolonged cold spells when the ground is completely bare of snow. Then too, it seemed most unlikely that the roots and crown of these woody plants would possess some sort of factor for greater cold tolerance than the upper parts of the plant.

I suppose there must be some temperature at which these plants are completely killed. Still it doesn't seem to happen here. They winter successfully in the Chicago area and in the Milwaukee area where the winter temperatures are not so very much milder than they are here. It should be possible to devise some method of protection which would overcome this little difference.

I believe that in an area like that where I live there are two things which work together to cause damage. Firstly there is the low temperatures reached during the winter and their duration. When temperatures are the very coldest the air is very dry. The desiccating effect of this must dry the stems very severely, especially when strong winter winds accompany the cold.
I reasoned that if I were to keep the stems completely away from contact with the air it might do the trick. So I acted on this idea.

I bought some of those foamed polystyrene rose cones, not for their insulating value — which is negligible — but because they are of convenient size and shape. I cut the tops out of these, placed them over the plants, and filled them with soil to cover completely the topmost buds. It worked very well! Almost all the stems lived through the winter very nicely. One of my two plants of '**Alice Harding**' had six short stems grown last season from ground level or below. Each of these produced a good bloom. I'll treat these plants the same way this fall and see if it works well again.

There is an interesting sidelight to this. Mr. Ivan Kivell of Greene, Iowa, wrote to say that he used essentially this same method to protect a plant of one of the original "Ito" hybrids. This had a stem four or five inches long. The terminal bud on this stem survived the winter and made a bloom! This happening convinces me more than ever that these Ito hybrids tend more to be woody in habit than herbaceous.

LETTER TO - Mr. Leo J. Armatys, Central City, Nebraska Dec. 17, 1971

Dear Leo:

It has been some time since we corresponded so am writing again rather than sending a Christmas card - though I do wish to send best wishes to you and yours for this Holiday Season.

If you will permit me I would like to express some opinions I have formed about tree peonies, and only about the tree ones as I have none of the herbaceous type nor interest in them, though space in the bulletins would seem to favor herbaceous about 75%. And of course I am a neophyte and have only been a member of the Peony Society for a few months but maybe "out of the mouth of babes .. "

Knowledge -

1. Lack of knowledge of tree peonies. The "Handbook of the Peony, Second Edition Amended" says "At this time there is no book or other literature available to those who wish information about the peony". If the public is to know, grow and popularize tree peonies then pertinent information oust be made available and disseminated. Pertinent information should be the following for all known tree peonies: Cultural requirements, quality of bloom, quality of plant, color of bloom, size and type of bloom, height of plant, time of bloom, floriferousness and ease of culture. This information could be arrived at by questionnaire to all Peony members and those known to be knowledgeable non members. These questionnaires could be returned to some central place for compilation of the returns. I would presume there should be sufficient reservoir of such knowledge to arrive at a fairly good consensus as a start of what a plant is worth. This would be a foundation from which to build and it could be revised and updated from time to time, the information available to the public.

2. Lack of knowledge of propagation by cuttings. Apart from lack of general knowledge by the public is the high cost of tree peonies. It would seem that for these plants to become favorites the cost of them must be lowered. I think this could be done if cuttings were rooted, resulting in mass production and low cost per rooted cutting. Another advantage would be that named plants for cutting stock would result in clones that could be guaranteed true to name. Apparently the Chinese and French a century ago propagated by cuttings and Mr. Ingram reported 98% rooting so it is possible to propagate by this method. If this be so then effort should be made to standardize rooting procedures by cuttings at some selected experimental research station so that the resulting standard procedures would be made publicly available and be quickly put to use. It should not be too long thereafter that a steady flow of lower cost, high quality true-to-name material would get into commercial channels to be made available to the public. If this research station was nearby to a tree peony test garden that supposedly had or would eventually have one or more of every known tree peony it would provide cuttings for experimentation and would guarantee against permanent disappearance of hybrid clones or species — the possibility of which having been deplored by Miss Saunders and Mr. Smirnow. Too, this should give impetus to hybridization — not that this phase of peony culture requires additional help — by more availability of material from which to work.

I talked with a friend of mine, a doctor and rhododendron enthusiast, about your reference to an English correspondent who roots peonies "in vitrol". This doctor suggested that what was meant perhaps was "in vitro" or tissue culture which may be that method of Dr. Murashiege to which I have in the past alluded but of which I know nothing.

This is a long and rambling letter and may be of no benefit but if these ideas do have merit I think in time it would make a great change in tree peonies as I understand the situation to be. Again with best wishes to you and again looking forward to your interesting and knowledgeable letters, I remain,

Don M. Jenkins, PO Box 192, Brevard, N.C.

THE "INTENSIVE CARE UNIT"

Chris Laning

Some peony seeds need extra special care if germination is to be successful and the fragile plants are to survive. While ordinary peony seeds are vigorous enough to produce stout little plants with no extra care, tree peony seeds as well as herbaceous twins and triplets, do need it if success is to be assured.

Let me give you information on the progress I have experienced with some twins that I received from Roy Pehrson. Here is a list of the hybrid twins:

1. '**Moon of Nippon**' x '**Canary**'
2. '**Moon of Nippon**' x F2A
3. '**Moon of Nippon**' x '**Regency**'
4. '**Moon of Nippon**' x '**Regency**'
5. '**Westerner**' x '**Alice Harding**'
6. '**Westerner**' x '**Alice Harding**'
7. '**Shaylor's Sunburst**' x '**Regency**'
8. '**Kate Berry**' x '**Argosy**'
9. '**Kate Berry**' x Delavayi lutea . (this one died)
10. '**Gertrude Allen**' x '**Argosy**'
11. '**Vesper**' x '**Black Pirate**'
12. Reddest Pod - not hybrid
13. '**Red Charm**' x '**Nancy**' – Not a twin and failed to germinate

These twins were in rather poor condition when they arrived by mail. The roots (or hypocotyls) didn't look too good, the season of the year wasn't right for setting them out and refrigeration just could not be continued. A new approach was needed and so the birth of the "intensive care unit"!

The "Intensive Care Unit" is an area within my plastic A frame where bottom heat is provided. Conditions can be controlled to suit the needs of all but the very weakest of seedlings. Watering, feeding, shading and caring for them is a joy within this unheated plastic tent.

To get a better idea of what this article is about, read in the June issue of PAEONlA, Page 9 - Twins and Triplets by Fred Cooper; pages 10-13 of the same issue, Questions and Answers on Twins and Triplets; also on pages 11-13, Seed Germination Techniques. In the September, 1972, issue on page 13, Propagating Tree Peonies from Seed; page 14-, Plastic Covered A Frame.

Do you wonder if the extra work is worthwhile? Well, I do have about 300 tree peony seedlings! Also, the twins have taught me a great deal. So I must say — hybridizing goes forward.

Twins are really interesting; two plants within one seed coat. Possibly you may think of them as Siamese twins; this just isn't so. When checking on them after one season of growth, I find that what I have is two individual plants growing side by side — real twins from one seed. Will they be "identical twins"? Who knows? Will there be a change in ploidy? Will they be the "Ito" type cross - yellow blooms eventually? Will any of them set seed? This is the great anticipation and suspense that makes intensive care pleasurable.

* * * * * * * * * * * * * * *

Roy, just for your information, I'd like to say that keeping the twins alive really takes some doings! I find that one of the stems of the twin is robust and the other is very frail (at least this is true in many cases). Maybe the frail one is a monoploid (or haploid). If this is true, this weak one

is the one of great interest to me. I have read that monoploid on occasion will set fertile seed. According to the genetics article, unreduced gametes are responsible. Now, under these conditions would such a plant be completely homozygous?, or at least, very nearly so? Please give me your thoughts on this! I can well imagine what benefits could be had if the other stem were tetraploid or octoploid.

Last year's plants (twins from you) didn't do too well — only three plants came up and then the weak portion failed to show up; it had died. The surviving portion of each of the three twins looks like pure diploid lacti.

This year's twins from you have been kept in the "Intensive Care Unit" and all but two have survived! Yes, even the frail portions are still green! If you will recall, these plants, because of their parentage, could be real "Ito's". They don't look like pure lacti (albiflora-out) plants so what do you think??

Chris - Yes, monoploids would necessarily be homozygous at every locus. Then if the count could somehow be doubled the resulting diploid would also be entirely homozygous. If self-pollinated seedlings could then be grown from it, these seedlings should be indistinguishable from the parent. Such a plant might be of considerable interest to a geneticist interested in studying inheritance in peonies, but I very much doubt that it would be of any real value to amateur plant breeders such as us. It would take something like a miracle for a plant like this to be homozygous for some fine trait which we would like to impart to a lot of other seedlings. Goodness knows, such fine qualities come along with rare frequency.

Yes, I think there is a possibility that one or more of those twins could be hybrids. If it should turn out to be true it might suggest that twins are more likely to occur more often among these hybrids than in pure lactifloras. Another season should tell you a little more about their leaf form. - Roy

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ABOUT BENLATE

Roy Pehrson

Last year I wrote about trying "Benlate" for the control of "leaf spot" or "measles" on peony foliage. Up to now I have not reported my results.

There were four plants of the very susceptible lactiflora "Vista" which I used for the test. All four had numerous small spots by the time I sprayed for the first time. Two of these were sprayed four times at weekly intervals and the other two were left unsprayed.

The result was not completely convincing. Spots on the sprayed plants continued to enlarge somewhat and some new spots may have appeared too. I was sure that the other two plants were more severely affected. One of those two became blackened to the extent that some of the upper stems dried off and the seed pods failed to mature.

On the basis of this very limited test I would be inclined to conclude that this material cannot be counted on for complete control. I suspect that results might be really quite good if treatment were to be started earlier in the season. I know of nothing else which is of much value. The experience of Mr. Alexander shows that it is very effective in the control of botrytis.

I believe this material is going to make most other fungicides obsolete if its cost becomes competitive. I paid nearly three dollars for a one ounce package, but I believe that in commercial sized quantities it can be obtained for about ten dollars a pound.

PAEONIA

Volume 4, No. 4 December, 1973

REQUIRED READING –

1. "The Peonies" by John C. Wister, $3.50 from American Peony Society.
2. The Bulletins of the American Peony Society.

The PAEONIA is authorized by Miss Silvia Saunders.

Our leader and teacher in hybridizing is Roy Pehrson.

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TABLE OF CONTENTS

Miss Silvia Saunders writes to tell us of the death of Mr. Oscar W. B. Anderson of Christchurch, New Zealand. Mr. Anderson was the outstanding grower of herbaceous peonies in New Zealand and was on Miss Saunders' list of "actual or potential hybridizers". The following letter was received from his daughter, Lesley Anderson.

* * * * *

Dear Mr. Laning, November 4, 1973

I have just returned from a trip to England and found the June copy of "Paeonia" among accumulated mail addressed to my father, Mr. O. W. B. Anderson. He had accompanied me to England (or vice versa!) to visit my sisters who are married and living in England. Ten days after our arrival in April he was taken ill, and he died on May 31st.

As you may know he was an avid gardener and a paeony enthusiast, and was a member of the American Paeony Society and in correspondence with several of your famous growers and breeders, Miss Saunders and Mr. Smirnow and Mr. Krekler of California among others. He was 87 when he died (would have been 88 next week actually) and though heavy or prolonged work in the garden was beyond him, he still tended his peonies, which are in bloom at the moment. As I write I have '**Helen Mathews**', '**Ellen Cowley**', '**Rose Marie**', '**Kelway's Glorious**', '**Moonrise**', '**Flame**' and '**Red Charm**' all "smiling" at me.

I suppose I must have imbibed his adoration of the paeony, for although my knowledge is nil, I am determined to learn and carry on caring for his lovely collection.

I see you give "The Peonies" by John C. Wister as required reading. I cannot find the address of the American Peony Society, so would be grateful if you would send me their address so that I can write for the book, provided the Reserve Bank will grant me the necessary funds!

With regards, Yours sincerely, Lesley Anderson

This Material Was Supplied By Miss Silvia Saunders -
Taken From The November, 1954, Issue Of "GARDENING ILLUSTRATED"

The Best Peony Species and Their Hybrids

by F. C. Stern, V.M.H.

The peonies usually grown in gardens are all derived from the wild *P. lactiflora* (syn. *albiflora*) from Manchuria and Northern China. These lovely sweet-smelling peonies have been cultivated for generations by the Chinese and Japanese and in recent years by the western nations, and especially lately in the U.S.A. The seedlings vary very much both in colour and in form, some single and some double.

The other "Paeonia" species, and first crosses between species, have been much neglected in the garden. These usually flower earlier than the lactiflora forms and many of them are most attractive, and easy to grow. They are accommodating as to soil; any good loam with or without lime suits them perfectly. Many of them like the half-shade and in this position the flowers last longer. Some people say they are difficult to move but I find that if they are moved as early as possible in October they will usually flower the following year.

The earliest species to flower in the garden is *P. cambessedesii*. It comes out at the end of April or early May. The pink flowers are very beautiful, especially in contrast with the foliage, which is a deep silvery green and red beneath. It is hardy in the south, of England, but as it comes from the Balearic Islands it might want a south wall in gardens farther north. *P. emodi* from Kashmir is the next to flower. It grows into a large bush about 3½ feet high and is very lovely when covered with white flowers. This plant does best in the open border in full sun; it is such a fine plant that it is worthy of a good place in any garden.

In May and June many species come into flower. The well-known European *P. mascula*, which used to be called *P. corallina*, with its red flowers, will grow anywhere and is useful in the garden to cover rough places. This peony was grown by the monks in the Middle Ages. Although it is indigenous to central Europe it is found in many parts of Europe and Asia Minor: in these outlying places it is usually found near the remains of a monastery, as for instance on the Island of Steep Holme in the Bristol Channel.

The yellow herbaceous species make delightful plants with their gay flowers; they are quite hardy as they come from the Caucasian mountains. The best is *P. mlokosewitschii*, which has deep yellow flowers. It is a charming plant in spite of its unpronounceable name and is quite easy to grow. It does extremely well in half shade and the flowers last much longer in this position; in fact, it grows better there than in full sun. Another delightful Caucasian species with light yellow flowers is *P. wittmanniana.* It enjoys the same treatment as *P. mlokosewitschii*. All these species that do not grow too tall are very useful as ground cover for lilies.

The low-growing *P. tenuifolia* is excellent in the rock garden. Its narrow dissected foliage is always pretty and shows off the deep red flowers to perfection. The late Professor Saunders, of Clinton, New York, made many crosses between species, some of which he sent me. The one I liked best was a cross between *P. veitchii woodwardii* and *P. tenuifolia*, which received an Award of Merit under the name of '**Redwood**'. The dark green leaves are finely divided as in *P. tenuifolia*. It is an attractive hardy plant, taller than *P. tenuifolia* with larger red flowers. Another peony with narrow leaves is *P. anomala intermedia*. It grows taller than *P. tenuifolia* and has much larger flowers, very large for a species, the colour a deep red. It is one of the finest flowers of all the species and there is a plate of it by Miss Snelling in my book "A Study of the Genus Paeonia".

The white-flowered *P. obovata alba* comes out later, usually at the beginning of June; it has a delightful cup-shaped flower and obovate leaves of a brown-green colour. It does not grow tall and likes a half-shady place. The variety "Willmottiae" is a larger form which is not so easy to grow as the type.

One of the finest wild species is what Clusius called the "great red Peony of Constantinople," *P. peregrina*; this peony grows wild in the northern Balkans. It is sometimes referred to as Fire King in nurserymen's' catalogues. The flower is a very bright red, cup-shaped, the leaves green shining and much divided. It is one of the latest, to flower, at the end of June or early July; it does extremely well in half shade and the bright, red flowers light up the shadows under the trees.

There are several fine forms of this peony in cultivation, but it is not possible to say whether they are hybrids or just variants that have appeared. The two best that I have grown are Defender and Sultan. Defender, which has received an Award of Merit at the R.H.S,, was introduced by Professor Saunders. It is a very strong-growing plant with the same cup-shaped flower as the species but of a deeper red and somewhat larger. It is easy to grow and is a first class plant. Sultan, whose history is unknown to me, appears also to be closely related to *peregrina*; it has even deeper red flowers which are larger than those of Defender. It is also a good garden plant but does not seem to be so strong as Defender. There is another form of this species found wild in the vicinity of Smyrna. It has the same cup-shaped flower and the same leaves as the Balkan form but the colour of the flowers is a salmon red; it is often known in gardens as '**Sunbeam**' or *P. peregrina lobata*.

The last of the herbaceous species to flower is *P. veitchii* and its variety *woodwardii*; a lower-growing plant. *P. veitchii* only grows about 18 inches high. It has several reddish, maroon-coloured flowers on each stem and is an accommodating plant, growing well in sun or shade.

The tree-peonies are favourites of mine; these stately plants are not seen often enough in our gardens. They are not difficult to grow; a good loam, with or without lime, suits them admirably. They are perfectly hardy but have an annoying habit of making their new growth early in April. These new shoots, on which the flower eventually comes, start into growth suddenly and grow very fast; they are soft and tender at first and apt to be cut by frost or the cold east winds we sometimes get in April. I have seen *Paeonia suffruticosa*, the wild form, growing on top of the rock garden in Stockholm, which shows how hardy these plants are, though, no doubt, the young shoots do not start until after the frost is over. Therefore, one must try to place these plants in some part of the garden where they will be protected from the east wind and where they will not start too early into growth. I plant them in a half-shady place among shrubs or facing north where the young growth will be delayed. In this garden a number of them grow well in these positions, and all of them are well protected from the east wind.

There are three wild tree peonies that are magnificent garden plants, all extremely hardy. *P. suffruticosa*, known as Rock's Variety, which I have already mentioned, has large, white flowers, with deep red markings at the base of the petals. It grows into a big shrub. The plant in this garden is about 8 ft. high and about 10 ft. in diameter. It received a F.C.C. in 1943. The seed of the wild species was sent from China, by Dr. J. F. Rock, to the Arnold Arboretum in Boston, U.S.A., about 1930, and distributed by them. These plants, when they flowered, tallied with Farrer's description of the wild plant which he found on his expedition to Kansu and describes so vividly in this book, "On the Eaves of the World". Farrer, however, did not send back seed. The wild form of the beautiful Chinese and Japanese tree peonies, the Moutan peonies as they call them, was always rather a mystery

It would seem that all the different beautiful forms which have been evolved by generations of Chinese and Japanese gardeners have come from this wild plant.

The new yellow tree peony, *P. lutea Ludlowii*, is a very fine plant, growing up to 6½ feet high. The flowers are a butter yellow, large and held well up above the foliage, and open in May. It was collected in 1937 by Messrs. Ludlow and Sherriff, in south-eastern Tibet. It is quite hardy and will grow in any soil, even on the rubble of the chalk cliff at Highdown. Seeds are freely produced and germinate well. This variety is a much better plant than *P. lutea* itself. The latter is a low-growing shrub with smaller flowers which are half-hidden by the foliage. Though *P. lutea* is a poor plant for the garden, it has been used very successfully by French and American hybridists to produce some fine hybrids which I will mention later. The other wild species is *P. delavayi*, also from China. This plant, growing up to 4 ft. or 5 ft. has large, deep maroon-red flowers; the size and shades of colour vary very much when the plant is raised from seed. The best forms with large flowers are decorative in the garden and useful as they will grow and flower under trees. .

Besides the Japanese and Chinese garden forms of these tree peonies, there are a number of good hybrids, raised by French growers and by the late Professor Saunders. The two I like best were raised by Saunders. '**Argosy**', with large, single yellow flowers, grows into a large bush and is a fine garden plant when covered with flowers at the end of May; '**Black Pirate**' has large, dark mahogany-red, single flowers and is very striking when in flower. The single forms appeal to me more than those with large double flowers, as in the French hybrid '**Souvenir de Maxime Cornu**'. The flowers in these double forms are too heavy for their stems and in the garden hang down in any bad weather. Several of the single forms have been raised here; '**Mrs. George Warre**' and '**Cassandra**' are two of the best, but the trouble is to propagate them. It is difficult to strike them from cuttings; they will layer but this takes a considerable time. The best way is to graft them onto herbaceous peony roots, but this is a matter for the expert propagator. Many of the hybrids and the garden forms come well from seed, though germination is sometimes slow, and it is always exciting to see what the flowers will be like, as there is always much variation in their colour and form.

WHO CAN TELL ME?

Roy Pehrson

I have a small start of a plant of the lactiflora '**Petite Rene**' which I have thought to be a tetraploid. This came about when, several years ago, I sprayed the foliage of a few clumps with naphthalene acetamide and a few others with acenapthene. In both cases these hormone type materials had been dissolved in dimethyl-sulfoxide.

Now I have a problem. Thinking about this plant I have got to wondering if it is really a complete tetraploid or just a sectoral chimera. It would take quite a while to prove it out by breeding experiments. I don't really understand the mechanism involved very well. If someone knows of a book which treats on the subject of chimeras pretty well, I should like to obtain a copy for myself.

I have another question in this connection too. Sometimes in digging a clump of peonies I may find one which has one or more buds not up in the crown of the plant, but well down below, seemingly right on one of the big storage roots. Are these adventitious buds? Are they derived from outer tissues of the plant? If so, should such a bud develop on a sectoral chimera would a stem arising from it then be completely tetraploid? I would very much like to know or to read some opinions.

SAUNDERS MEMORIAL MEDALS

At the Peony Show in Milwaukee this past June, two Saunders' Memorial Medals were presented for outstanding work in the advancement of the peony. One of these medals was given to "The House of Gratwick" for their great work with tree peonies, especially lutea hybrids. House of Gratwick is made up of three men — the glamour boys and Gary Seaman. Gary is a very likable fellow. In joining them (Gratwick and Daphnis) he is in a position of starting at the top and working up. Gary is now offering lutea hybrids on his own – we all should wish him success.

The other medal was presented to Roy Pehrson. The September 1973 issue of The Peony Bulletin gave an account of the Gratwick presentation and this issue of Paeonia will let our readers know about the other medal. This, in part, is what Miss Saunders had in mind when thinking of reasons for presenting this medal to Roy Pehrson _ _ _

> Our Roy Pehrson, from Mankato, Minnesota, 27 years ago (1946) began working with hybrid glads. But as he himself has remarked, "Too many diseases!" So he switched to daylilies. And there, there were soon "too many day lilies". So in 1959 he moved over to a quieter, more leisurely plant; a plant that wouldn't push him so fast; a plant that gives you time to think. Yes, ladies and gentlemen, I refer to that most neglected of all perennials — the Peony.
>
> At just about that time, several other men popped up, seemingly out of the cracks, and in 1963 the Peony Robin was formed. Very soon it numbered ten, then twelve. From the first, Roy Pehrson was assigned a leading role. If anyone did not know a chromosome when he saw one, he had only to write: "Dear Mr. Pehrson, just what is a chromosome?", and then began what was to end finally as a whole college course in genetics, by correspondence. Any questions at all, whether it was to do with bagging or breeding, crossing or chromosomes, hybridizing or harvesting, could be brought to Teacher Roy who was willing to give unstintingly of his time, his energies, and his knowledge, towards helping new young enthusiasts get started on his own favorite avocation.
>
> His knowledge was deep. (He will deny this, it is so much less than he wishes it were.) But it was a mere splash compared to the depth of his patience. He seemed born for the role of Teacher. While incomprehensible books continued to be written and published, lucid explanations continued to flow from Roy's pen, seemingly inexhaustible. He has the knack of putting very complex ideas into very simple language, and there must be few of us indeed who can say that they have not learned at Roy's knee.
>
> Then the Newsletter came into being, and for three and a half years Roy has been its "leader and teacher in hybridizing,," Until recently he has written most of its pages. Now some of his pupils are trying their wings, so that every issue of the Newsletter (now named PAEONIA), is 10, 12, or 14 pages of loud active discussion.
>
> He coaxes, urges, stimulates, yes, even bribes us with offers of seeds (sprouted seeds, mind you) and roots of fancy bred hybrids designed to save you 5, 10, or 15 years of work; he bribes us into hybridizing and then writing about our accomplishments, if any.

And as if that weren't enough, he has made several very beautiful and worthwhile hybrids himself. 'Lullaby' we all saw at a recent show, and a beauty it is. He has pushed several first or second generation hybrids on, into an additional generation or even two, or he has crossed them in such a way as to give the first real QUINTUPLE hybrids — having five species bloods in one plant. Here again he is unstintingly generous and gives away these very fancy hybrids to those who care and will use them.

But after all's said and done, it is as a Teacher that Roy's influence has been widest and greatest. And I speak for the Peony Society in saying that we are all deeply happy and proud to be able to present the Saunders Medal for "Outstanding contribution to the Peony" to our Beloved Teacher, Roy Pehrson.

PEONY PROBLEM

Chris Laning

'**Silver Dawn**' (willmottiae x macrophylla) is one of the earliest of hybrids to bloom. Two years ago, in April, it sent up ten stout stems with buds on the tips that were about the size of a small walnut. It promised to put on a good show but a mighty cold night changed its plans and froze it solid. Two days later these foot long stems were flat on the ground. Second growth provided no blooms; in fact, I have never seen a bloom on it — freezes back every year.

'**Angelica**', a plant Miss Saunders gave me just two years ago (and this one is a sibling of '**Silver Dawn**'), managed to get through the cold, spell in shape to produce two deformed blooms. Even though they were far from perfect, their beauty was great enough to keep me in a high state of expectation. If ever you have an opportunity to buy this plant — never mind the cost — get it !!!!

Along with these two plants, '**Roselette**', '**Roselette's Child**', '**Rushlight**', '**Starlight**', and all the other very early, early and even early midseason hybrids were badly damaged again this year. What to do? Well, these plants have been transplanted this fall onto higher ground. I admit, I knew they had been growing in a frost pocket, but the lactiflora and officinalis thrive in this location so they could be expected to perform in a reasonable way — but they didn't! Now! — they had better start performing or else get demoted to the plastic A-frame (an unheated plastic tent). "Shape up" or forever live in the nursing home, I say.

Now, ladles and gentlemen, if you have a problem similar to mine, read the enclosed reprint from the American Horticulturist on microclimates. Yes, I know it's about rhododendrons but this information applies equally to our peonies. If you don't have a problem such as this, read it anyway. Study it. It will do you good !

MLOKO

(Continuation of - or rather conclusion to – Mloko article of the September issue of "Paeonia" Volume 04, No. 3, pages 3 & 4)

Chris, you should re-read the description of *daurica* "*triternata*" on page 21 and again on page 29 of THE PEONIES, If Stebbins considered mloko only a form of *daurica* it follows that in plant characteristics they must be almost identical. If your own plant of *P. daurica* is markedly different than your mloko, then you really don't have daurica, do you? Could it be *P. decora*? One has to have a streak of suspicion in order to question the accuracy of identification of ones' purchases, but some plants ARE wrongly labelled. Prove it to yourself. Use pollen of your *daurica* on your mloko. You should get a real good crop of small bright seeds. If you don't then you have something else. In reality, Stebbins calls mloko a yellow *daurica*. If Silvia then calls the plant I got from her a pink mloko the two things are not real contradictory. I can properly call it *daurica* since this is proved by the fine seed crop resulting from using its pollen on my plant of mloko. It's too bad that Stebbins did not record what the hybrids are like.

Obviously the author of that "mossy whiskers" article did not know the breeding history of the plant or plants from which he grew those non-yellow seedlings. Can one be certain of the origins of those seeds from the U.S.S.R. which you now have ?

I have four little seedlings grown from seeds once sent to me by the late Sam Wissing. I should think that he would have had only one plant, but I do notice some differences in foliage form and in vigor. They are four years old but still pretty small.

The botanical description gives the color of mloko as yellow. Logically, I suppose that we must accept a yellow flowered plant as mloko, and then wonder whether plants with other colors are hybrids or possibly pure *daurica*. Yellow ones might also be hybrids in some instances. I now think it improbable that the yellow of herbaceous peonies results from a simple recessive factor.

Roy -- Does fresh pollen give better results?

No, I was not able to detect any difference in results from the use of my own freshly gathered pollen over that of the same kind sent to me by others. The trouble is that in the use of these lutea hybrid pollens it is not possible to know which seed is a hybrid and which is not. Another thing; after only a few days ones own pollen is no fresher than any other pollen was when first received. The record keeping which would be needed to assemble any meaningful data is just more formidable than I care to undertake. It would require keeping separate far too many batches of seeds. Do it yourself if you wish to, but as for me, I don't think extreme freshness is all that important anyway. This past season was a disastrous one for the Ito cross. The very day when the lactis first started to open in force the temperature went to 100 degrees, the following day 98, and it stayed hot for a whole week. The lactis literally exploded into bloom. In order to make as many crosses as possible, I was forced to pollinate very many opened blooms. This cut way down on the number of properly protected crosses that I could do. There are 53 batches of seeds from the unprotected crosses, some with a cupful or more. There are only 14 bags with seeds of the protected crosses and the number of seeds in them is small. Several ideas have been advanced to explain the reason for my good success in obtaining Ito hybrids from the 1969 crop of seeds and my very poor results since then. I appreciate these suggestions and think each of them may be responsible to some degree. Lately, though, I have begun to wonder if the reason may not be something different. Maybe temperature control is a little more critical than for pure lactiflora seeds in bringing about the hypocotyl germination of these hybrids. Unwittingly I may have done something more nearly right in germinating those 1969 seeds than I have done since then. Possibly the proportion of hybrid seeds has been about the same in each crop of seeds, but I have just failed to get them to sprout. It could very well be true. Nature

sets up better conditions for germination than we can contrive to simulate indoors for quicker germination. If I had planted the dormant seeds outdoors I may have had better luck overall. Well, anyway, the plants I do have are a strong incentive to me to keep trying: I do wish they would hurry it up a bit though.

In moving some Itos into permanent roomy spots in the front part of the garden this fall, I noticed another point of similarity with the tree peonies. Most of these had very nice buds on the underground parts. On a few of these one or more of these buds had already expanded into white sprouts. One of these was about two inches long. Twenty-nine plants have now been moved to these more favorable spots, I have not moved the five or six biggest plants. I want to see them bloom where they are before disturbing them.

Right from the very start we have been referring to those hybrids of Mr. Toichi Ito as the "Ito hybrids". It has just seemed perfectly natural to do this. Then as others have produced more of these plants and plants of the cross between lacti and the delavayi-suffruticosa hybrids as well we have broadened the term to include these as well. Again, since these latter seem indistinguishable from the others in plant habit, it seems perfectly natural to do this.

In his article in the September, 1973, Bulletin under the title "Classifying the New Peonies", Mr. Franklin Styer writes the following: "It would appear that the membership would be well served by a division into grexes of the peony hybrids now being produced. The Society can allow the breeders to do this, being of itself only a recording party. If the grouping should later be found in some way impractical or illogical, the Society could step in to legislate a correction."

Without consciously intending it, we may have given a little start toward the acceptance of this grex name for these plants. We may have been influenced by the following: the name is short, easily remembered., easily spoken and easily written. The name is obviously Japanese, so its use continually gives recognition to the originator and the place of origin. Mr. Ito produced no other hybrids so there can be no confusion through the use of his name. From now on I intend to write of these hybrids as the Itos without also apologizing for doing so by enclosing the name with quotation marks. If you two feel as I do, that the timing is now appropriate, I think it would be just fine if you, Silvia, were to write this up for the Bulletin. On several counts it would be better for you to do it than for me. Will, you? It fits nicely into your self-acknowledged role as organizer and spokesman for our group. There's nothing scientific about it so you can't go wrong. If you should have any doubts you could send me a draft for comment. It could be a nice touch to ask for Mr, Styer's comments too.

A mild complaint has been noted, charging that PAEONIA concerns itself entirely with the herbaceous peonies, with never a mention of the tree peonies. Well, it may certainly seem that way but there is no deliberate plan about this. If those who live in the tree peony belt and are active in the improvement of these plants do not write to share their successes and failures, how can it be otherwise? But remember, this is not a medium for further extolling the virtues of these plants. We'd dearly love to learn what is being ACHIEVED, How about it?

Is it true that the only difference between an "organically grown" apple and the usual kind is that the "organic" one is wormy?

Chris, I think your decision to do some experimenting with the development of foliage bronzing is going to involve you in a real baffling challenge. I'm beginning to think that there are no less than three, and possibly more, kinds of bronzing in peonies; each of which could be under different genetic control. This could turn out to be a real tough nut to crack.

Slowly, but increasingly, some nagging doubt has been growing on me. It's real gratifying to have so many people receiving our letter, but I commence to wonder if many of them will ever do any actual work at hybridising. Do we have them with us only because of a past lack of news of this kind in the Bulletin? The extra two dollars or so per year would represent no hardship to most Society members. It's sobering to realize that we may be making very little progress after all.

The other day (Nov. 7) I set the last of the rose cones over the tree peonies. Instead of using soil, this time I stuffed them with compost. I gave no protection to the Itos last winter, but one of these looks so much like a tree peony that I put a small size cone over it too.

There are two plants of the cross ('**Petite Rene**' x '**Thunderbolt**'). By some coincidence the one of these seems to be the most "woody" in habit of all these hybrids and the other the most convincingly herbaceous. The one I protected had a real big, fat dormant bud at the tip of its longest stem which is about 5 inches tall. This stem is very hard, looking to me as woody as any tree peony. I hope to have this bud survive the winter. This plant took on a very deep brownish bronzing in late fall. This makes the plant even more interesting.

The other plant of this cross is one of only two which is entirely herbaceous in habit. The stems are no harder than those of lactiflora. Both of these have grown into bigger plants at their age than any of the others. This one has a foliage form with very little suggestion of the tree foliage form.

Both of these have foliage which seems thinner and less "leathery" in texture than the others. I suspect that these two have an entirely different chromosomal complement than the others, I wonder what the flowers will be like?

Yes, Chris, I agree with you completely. The advanced generation hybrids from Gratwicks will not remove the challenge from the Ito cross. I do believe that there may be among these a few plants whose pollen might increase the effectiveness of the cross several fold. If my theory concerning the role played by ploidy in this cross is correct then results could be as much as six times better. I doubt very much that the improvement is likely to be this great. There are obviously other factors which play an important part in the difficulties of this cross. Even with a six-fold improvement this would still be a very difficult cross. It might even be difficult to notice the improvement.

Chromosome counts should be made. One of the original Itos should be tested, and so should all of the fertile advanced generation plants, including also F^2A and F^2B. With these known it might be unnecessary to test the F1 lutea hybrids since it might very well be possible to infer their counts from the results obtained for the others. It is certain that the understanding gained would be of some help to hybridizers.

SUGGESTION FROM SILVIA SAUNDERS

I am wondering if it would be worth our while to put an advertisement into Horticulture Magazine, saying that your chances of producing something NEW and WORTHWHILE in the peony world are 100, or 1000, or 10,000 times as great as in the worlds that have so long been exploited and over-exploited (roses, glads, iris, day-lilies, etc.) because the doors to many different untapped gene pools have been unlocked — but all in words of one syllable, and mighty few words.

What about running a contest to see who can come up with the best ad — I think we can only have about three or four lines and it might cost something around $70 for a year — but wouldn't we get ten new members per year? What would be all we'd need, to cover our costs!

Furthermore, the long road from seed harvest to bloom on your new hybrid is now more like 3 years rather than 5 or 7 as it used to be. THE PEONY -- OUR MOST NEGLECTED PERENNIAL!

RECOMMENDED LIST OF PEONIES

American Peony Society Survey

Singles

WHITE	PINK	RED
'Pico'	'Sea Shell'	'Imperial Red'
'Spellbinder'	'Sparkling Star'	'President Lincoln'
'Krinkled White'	'Dawn Pink'	'Man o' War'
'Le Jour'	'Mr. Thim'	'Arcturus'

Japs

'Bu-Te'	'Westerner'	'Dignity'
'Polar Star'	'Gay Parse'	'Charm'
'Lotus Queen'	'Largo'	'Nippon Brilliant'
'Carrara'	'Kay Tischler'	'Hari-ai-nin'
'Moon of Nippon'	'Ama-no-sode'	'Onahama'
	'Neon'	'White Cap'

Semi-Doubles

'Miss America'	'Spring Beauty'	'The Mighty Mo'
'Minnie Shaylor'	'Silvia Saunders'	'Chippewa'
'Margaret Lough'	'Prairie Belle'	'Harry L. Smith'

Bomb Type Double

'Snow Mountain'	'M. Jules Elie'	'Dixie'

Doubles

BLUSH	WHITE	LIGHT PINK
'Moonstone'	'Mother's Choice'	'Mrs. Franklin D. Roosevelt'
'Nancy Nicholls'	'Bowl of Cream'	'Dolorodell'
'La Lorraine'	'Dr. J.H. Neely'	'Frances Mains'
	'Ann Cousins'	'Nick Shaylor'
	'Gardenia'	'Westhill'
	'Amelia Olson'	'Reine Hortense'
	'Marcella'	

DARK PINK	RED
'Emma Klehm'	'Kansas'
'Ensign Moriarty'	'Ruth Elizabeth'
'M. Jules Elie'	'Tempest'
'Sarah Bernhardt'	'Rubio'
'Edulis Supreme'	'Felix Supreme'
'Wilford Johnson'	'Highlight'
'Rose Glory'	'Sir John Franklin'

WE WISH ALL OF OUR READERS A BLESSED CHRISTMAS AND HAPPY NEW YEAR

Chris and Lots Laning