PAEONIA

Volume 3, No. 3 September, 1972

REQUIRED READING -
1. "The Peonies" by John C. Wister, $3-50 from American Peony Society
2. The Bulletins of the American Peony Society.

SUGGESTED READING -
1. "Peonies - Outdoor and In", by Arno and Irene Nehrling
2. "Create New Flowers and Plants" by John James
3. "General Genetics" by Srb, Owen, and Edgar. This is a college level text.

The PAEONIA is authorized by Miss Silvia Saunders.

EDITORS are Chris and Lois Laning, 553 West F Avenue, Kalamazoo, Michigan, 49007. Suggested yearly contribution to cover expenses of printing and mailing is $2.00.

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DON HOLLINGSWORTH WOULD LIKE ——

'Eclipse' (Saunders 1950, P. officinalis Rubra Plena x P. coriacea) plant and/or pollen desired.
'Scarlet Tanager' (Saunders 1942, P. officinalis Rubra Plena x P. lobata of Perry) plant and/or pollen desired.
'Adolphe Rousseau' (P. lactiflora variety).
'James Kelway' (P. lactiflora variety).

He offers in exchange some of the named hybrids and unnamed kinds suitable for breeding. Don's address is 5831 N. Colrain Avenue, Kansas City, Mo., 64151.

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LETTER FROM MRS. WALTER S± SCHMIDT. JR.
Mistover Farm, Reiter Road, East Aurora, New York, 14052

If you have any species peonies available that can hold their own under semi-wild conditions I should be interested in hearing about them. By semi-wild I mean planted in good rich soil with such tough companions as Achillea, Monarda, malva, tradescantia, and various loosestrifes, watered the first year only, and 'weeded' by placing flat rocks between the plants to keep them separated and the weeds at bay. I have a 50-foot border of these plants near my barn, soon to be increased to 100 feet as I keep finding plants adapted to the conditions. (White epilobium, various veronicas, boltonia, sundrops, macleaya, lythrum, etc., etc.) Making such a garden is a lot of work, but maintaining it is hardly any work at all, and finding new plants a very pleasant challenge.

ED: The hardiest of tree peonies (suffruticosa) would probably work out well. Many herbaceous peonies will hold their own under such conditions. Suggestions from our readers would be appreciated on this subject.

## EXCERPTS FROM MIDWEST PEONY ROBIN #1, 2/19/72

Using the Hybrid Varieties For Seeds: I was very encouraged by having seeds on several Fl hybrid garden varieties. My triploid hybrid varieties were hand pollinated with tetraploid kinds. Five young divisions gave 10 seeds from 20 flower heads, as follows:

| Pod parent x pollen parent | Pollinations | Good seeds |
|---|---|---|
| 'Cardinal's Robe' x 'Good Cheer' | 2 | 1 |
| 'Sophie' x 'Moonrise' | 2 | 1 |
| 'Rose Noble' x 'Roselette's Child' F2 | 1 | 1 |
| 'Legion of Honor' x 'Moonrise ' | 8 | 3 |
| Dark single x 'Belinda' | 7 | 4 |

This is an average yield of 0.5 seeds per flower head pollinated. A dozen mature plants (estimate 10 flowers each) might have given 50 or 60 seeds, a far cry from that reported in THE PEONIES for the Sanders lobata hybrids, "The several hundred plants in the nursery give not more than twenty-five to fifty seeds in a season." I understand that the Saunders report pertained to conditions of open-pollination.

Peonies are generally considered largely self-sterile. In the pollinations I did, special care was taken to assure that the desired pollen was applied liberally to the stigmas before the self pollen fell. This was about the only trouble I took. Dried pollen was applied with a small brush so as not to spoil the appearance of the flower and no protection was given. This might be called the landscape gardener's cross! In evaluating the results for your own use, two other factors than hand pollination, which may have figured in the above results, should be considered. One is that I have sought out hybrids which have been previously reported to have given one or more seeds. The first three named above are such varieties. Also, I used pollen varieties previously reported to give fertile pollen and in each case pollen from the sample used gave seeds on other varieties for me. One other pollen used, '**Nova**', gave no seeds on diploid, triploid or tetraploid pod varieties. I am assuming my sample of this pollen was infertile.

How about making this type of cross on the lutea hybrid garden varieties? It has already been done successfully. The numbered Gratwick hybrids which Hebert and Leo secured last fall include some from such matings. The pollen of those plants might be a good choice for using on the lutea hybrid Fl varieties. I am wondering now if it might not work nearly as well to use pollen of the Fl named varieties. The choice and availability would be much better for most of us.

Re-blooming Peonies: The December, 1971, issue of the hybridist's newsletter, now named PAEONIA, carried the report that a plant of '**High Noon**', lutea hybrid, had, flowered during the fall for a Canadian grower. Miss Saunders writes that '**Amber Moon**' has also been reported to give an occasional fall bloom and that '**Renown**' is noted to give an occasional bloom after the regular season is over. In my garden a delavayi-lutea seedling flowered three times during 1971. The first time was in May, a second growth suffered severe burn from the combination of intense sun and near 100 degree heat in late June, a third round of growth flowered in August, and a fourth flowered in October. This plant has nothing but its vigor and the re-bloom to recommend it, but surely something can be made of this by using those better hybrids that also seem to have the same ability.

Seed Germination: I will mention only that I am becoming more certain that some peony seeds have a requirement to be held fairly long at high temperature before the root will be released to grow. Yet, once this period has been accomplished the root will still not grow until given a certain lower temperature, usually in the range of 60-70 degrees or lower. The root growth temperature occurs out of doors in the soil about the end of summer. These two temperature factors, if they are genuine, argue for planting of held-over seeds by late spring. Also, seeds to be germinated indoors might best be given several weeks (I am now using 8 to 10 weeks) at 75 degrees or above before reducing the temperature for root growth to commence. This latter fits very well with Roy's plan to have roots emerging in late November or early December.

Secondary Bloom Stems to Improve Seed Production of. Doubles: Established plants of '**Karl Rosenfield**' and a bomb double seedling responded well to decapitation by giving blooms with good carpels and, eventually, seeded well. '**President Taft**' and several full doubles did not. The semi-double '**Miss America**' gives secondary stems right along with the primary stems and it is the flowers on the former that usually have carpels which will function normally. This is a characteristic that might well be concentrated in a breeding program. The secondary stems tend to extend the flowering period of this variety.

Pollen Parents: '**Good Cheer**' (P. officinalis alba plena x P. lobata of Perry) gave a better seed yield on everything tried, lactiflora or hybrid, than any other hybrid or species pollen used. Also, the seeds germinated in a shorter time than did those from the same pod parent by a different pollen. '**Alice Harding**', lutea hybrid, gave almost no pollen for me, too. A friend had a small amount, and I had some left from the previous year, both of which may have given a few seeds. I have a notion that there are a lot of lutea hybrids that are potentially more useful as pollen parents. I am enclosing a writing on the subject of pollen preparation which I got ready last fall but still have not circulated. Any reactions will be appreciated.

'**Oriental Gold**': I have used pollen from this yellow variety and found it apparently quite fertile on P. lactiflora varieties. The seedlings were weaker, also smaller in their leaf parts. However, several survived the 1971 summer. In the rooted stage I lost several to the black rot condition which I described last round. This latter condition has been experienced to a less serious extent in my current season's germinations. I have some discussion of that for the next round.

'**Claire de Lune**': Pollen seems to have exceeded other Fl hybrids when used on P. lactiflora varieties.

Nematodes: Would anyone who has information, especially experience or at least direct observation, tell me what they can about nematodes. How are they diagnosed, are different varieties equally affected, are there any good references, etc. I realize there are some tales about these things which generate a great deal of anxiety on the part of gardeners, but it seems notable that one seldom hears a tale from the person who thinks he has them. I suspect there is a great deal of genetic resistance prevalent among peonies. If we can talk about it a little, perhaps we can identify some varieties that carry the potential.

Best wishes to all,

/s/ Don Hollingsworth

ED.: Some of this material was printed in the June issue of PAEONIA and is reprinted for emphasis.

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# SOME THOUGHTS ON POLLEN MANAGEMENT

Don Hollingsworth
5831 N. Colrain Ave., Kansas City, Mo. 6415L

After two seasons of preparing peony pollen and making hybrid crosses, I am increasingly concerned that instead of preserving the pollen's potential I may be reducing its effectiveness.

As I look back over my results, it appears that not more than a few good seeds have been produced from hybrid pollens of anthers collected from newly opened blossoms. Conversely, my apparent successes may be generally associated with pollens taken from fully opened flowers, most of which had been cut and held for display.

Several Saunders lobata hybrids and a few lutea hybrids have been available locally. I have ordinarily gathered anthers rather than ask for a whole blossom from the gardens of others. When taken as the bloom opens there is little possibility of contamination by other pollens. When dried, the anthers give a nice quantity of pollen even from low yielding kinds. This process seemed good enough and the low seed production could easily be laid to the mixed up chromosomes of the hybrids.

However, at the 1969 Kansas City Peony Display, I acquired a bloom of '**Cytherea**' and one of a double lutea hybrid. The lutea was local and I also had its pollen from an earlier collection. At seed harvest, '**Cytherea**' pollen proved to have been about as effective as that of lactiflora varieties. The second take of lutea pollen gave 19 seeds from three carpels of eight flower heads while that from the first collection gave none. These results provided a dramatic contrast.

In 1970 my local collections of pollen performed about the same as before while limited experience with pollen from more slowly developed blossoms was again good.

In THE PEONIES (p. 120) we are advised, “one way to secure 'pure' pollen is to cut the bloom just before it is due to open and place it in water in a cool place, preferably in the house. Here its opening will be delayed, and as a result the anthers will have more time to come to full maturity or ripeness, and no pollen is lost.”

No mention is made whether this conclusion is drawn from specific experimental results or is perhaps offered more by way of lore from an experienced breeder. While I had supposed this recommendation directed primarily to the task of securing uncontaminated pollen, I am now ready to accept a much more inclusive meaning. I believe there is enough possibility that slow maturity is a critical need in achieving viable hybrid pollen that I will follow the above passage until some specific comparisons can be made to test the proposition.

In the search for techniques by which we may better manage hybrid crosses, I think it worthwhile to thoughtfully search our experiences for clues, then test the clues. Although the above statement of experience comes through in the writing as a simple contrast of results, the whole array of experiences was much more complex and not at all clear. When this is tested more carefully we may well find that it does have a practical value with varieties having a greater degree of hybridity or other factors which reduce viability. Yet on kinds that have an abundance of good pollen there may be no practical benefit for the extra trouble.

If any of those who read this have comments after comparing the idea with their own observations or what has been heard from others, I would appreciate hearing the reactions.

LET US PEER OVER HIS SHOULDER AS MR. SMITH READS A LETTER FROM -
Don Hollingsworth
March 20, 1972

Dear Mr. Smith:

My apologies for the long delay in answering your letter. Hopefully, there is still time for you to consider whatever is useful in that which follows. Since my experience is quite limited, there is much that should be considered as thoughtful speculation.

By way of general information on some of the interests I have been pursuing, I am enclosing some copies of correspondence and other writings. Some of these are marked "loaner materials". If it is convenient to you I would like to have them back eventually, as these help me to circulate ideas to other correspondents without having to do a lot of typing. Your frank comments on these ideas will be welcomed.

You asked about Reath's *Paeonia potanini* Tall Yellow, the Ito cross and reference materials.

*P. potanini*. I had two flowers from a first year division in 1971. They were short petalled, even in the bud not covering the anthers and stigma. When I mentioned this to Reath, he said that after becoming established the buds would be formed in a more normal way. The flower color was a good yellow. I have the pollen, but did not use it last year as the tree peonies here had already flowered. Will use it this spring on the few flowers I will have of the Japanese tree peonies. No seeds were made on the flowers of Tall Yellow by tree peony and lutea hybrid pollen which I used.

You may have seen in PAEONIA, the peony hybridist's newsletter edited by Chris Laning, that Fred Cooper found a blend of pigments in Reath's Tall Yellow. This led him to speculate that it is a hybrid. In event this is true, we would expect it to be less fertile than a species clone, especially when crossed with a species that is different than that of either of its parents. It might work best when used as the pollen parent of a cross and better on the non-hybrid Japanese tree peonies than the hybrids such as the Lutea Hybrids or Ito Hybrids.

Among the herbaceous varieties, this pollen may be more likely go give seeds on the tetraploids, those with 20 chromosomes. (This doesn't give much to work with as most of the decent garden varieties are diploid, 10 chromosomes, as supposedly is Tall Yellow.) At best, one would not expect to get many seeds per cross, but the offspring might be very interesting and valuable as breeders, '**Moonrise**', '**Paula Fay**', '**Archangel**', '**Good Cheer**', double P. officinalis varieties, all are tetraploids that have something interesting to offer a breeding program.

Tall Yellow flowered May 5 last year. If that is before your tree peonies flower I might be able to send some fresh pollen for your use. Let me know. Also will be glad to send a bit of the old.

Ito Cross. With either '**Yellow Heaven**' or '**Gauguin**', I would pollinate the finest quality lactiflora garden varieties that are capable of producing seeds. It is the lacti varieties that have the most to offer in plant form, vigor and readiness to propagate. The idea would be to transfer the lutea yellow color to plants that are otherwise the equal of the best lactiflora varieties.

If you have pollen remaining at the end of the season, save it to put on Japanese tree peonies next spring. (Seal the dried pollen in a film can and hold it in the refrigerator or deep freeze.) It may not work but if it does you might get something really nice.

Either '**Gauguin**' or '**Yellow Heaven**' might well be crossed onto tetraploids, again choosing the best garden varieties, but the results might be better than with Tall Yellow since these two are good garden plants. Even so, it would be surprising to get good varieties on the first generation. One should always be prepared to carry the cross forward for two or more generations in order to bring out the potential afforded by an Original cross.

What lactiflora varieties would be best for the Ito Cross? An obvious choice would be the really good seeders. You have two in '**Westerner**' and '**Primevère**'. However, there is more to be had than a large number of seeds. Some of the best varieties that have been introduced came from plants that give only a very few seeds. A good example of this is illustrated in the enclosed paper titled "The Lobatas, Perry." Note that while Saunders grew over 180 of these hybrids from '**Primevère**', he named only three of them. At the same time he named two out of only five from '**Adolphe Rousseau**'. Such qualities as how fine the plant form and flower, whether the seeds germinate well, and the vitality of the seedlings are all matters which one should consider. '**Moon of Nippon**' doesn't have a great reputation as a seeder, but has produced an outstanding full double seedling for Roy Pehrson. '**Shaylor's Sunburst**' produces only a limited number of seeds but is a fine plant and the seedlings are especially healthy. '**Polar Star**', a Japanese flowered variety, is the pod parent of '**Mother's Choice**', one of the lactiflora varieties that is fast attaining acclaim. Some of the Auten reds are especially fine and also produce seeds.

One of the most unfortunate handicaps the present generation of peony hybridists must endure is the poor pedigree-keeping habits of those who have gone before us. Perhaps the Peony Society is most at fault in that the variety registration procedures have not encouraged the recording of parentage. If it had been done we could now use the information in selecting potential breeder plants. We do not have to let this omission go on. If each of us keeps track of our work we will be able to share the information and eventually overcome the darkness of knowledge in this area. We should look forward to the day when not only are pedigrees furnished upon the registration of a variety, but cross information, including comments on performance may be published for seedlings of new and interesting crosses before they are old enough to tell whether any of them will be registered.

Reference Articles. Do you go back as far as December 1968 in your APS Bulletins? I have reproduced some of the articles for a handout which is enclosed. Keep this or pass it on to someone else as I have more. Also you should have the 1959 hand-book of the Peony Society, and the book, THE PEONIES, by Wister. Pages 132 to 135 of the latter gives a bibliography of articles and other books. Most of these may be available through the Arnold Arboretum Library and some of the University libraries in your area. Among those listed, the 1938 articles by Saunders and Stebbins are excellent background pieces. Older articles by Saunders are very fascinating, also.

Let me hear if you want some pollen. Best wishes.

/s/ Don Hollingsworth

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## SUGGESTIONS FOR GUIDELINES IN ONE PHASE OF HYBRIDIZING ——

Right off, I think of two problems that keep cropping up in things written by our colleagues that could be clarified simply by having some rules which both the writer and the reader have in common agreement. One has to do with the manner in which a cross is expressed in writing, or orally for that matter, as in the Ito Cross, lactiflora x lutea hybrid, '**Vesper**' x '**Golden Bowl**'. There is an established rule among plant and animal breeders which will help in this case. The mother or pod parent is given first, then the "x" denoting that it is a specific cross, then the sire or pollen parent. Another way to read the above cross is, "Out of '**Vesper**' and by '**Golden Bowl**'", which wording is obvious when thinking of a mating in animals. In the absence of a stated rule on this, people new to these terms are unaware that the additional specificity can be achieved, or is even important. For example, in the September issue a writer reported 12 seeds of '**Laddie**' x suffruticosa germinated and planted out. Now, if one knows '**Laddie**' does produce a few seeds, but that most are soft, he knows that likely it was '**Laddie**' pollen and the seeds were probably borne on the suffruticosa parent. However, the information remains in doubt until one conducts inquiry with the person who made the cross. I believe that if we publicize some useful rules the potential ambiguity of reports could be greatly reduced and they would be more useful to others. Incidentally, the Saunders and Pehrson accounts of crosses in the December, 1971 issue of PAEONIA provide a model for rules on this matter.

There is another area where we need some guidelines or principles laid down. It has to do with citing references when technical information is given. A case in point is the writing on mutations which was published in the January 1971 issue. It was stated that chloroform and naphthaleneacetamide (NA) will produce mutations. No "proof" or reference was given. The reader was not given useable instructions nor a place to go for them. That is frustrating, to say the least. Additionally, I am familiar with Wolfe's original report on results with NA, published in the APS BULLETIN No. 170, September, 1963. In September of 1970 I talked with him about it and found that he still did not have confirmation of heritable mutation, although he has some very vigorous plants which were treated. However, in digging around for some leads on this chemical, I find that it was researched along with indolebutyric acid and other root-inducing hormones. Moreover, it is one of the active ingredients in the commercial rooting compound ROOTONE, also in TRANSPLANTONE. One plant physiologist has suggested to me that the effect of the leaf treatment may be simply a result of creating a surplus of the hormone in the plant's tissues, giving it a growth boost. I do not in any way mean to discount the results of this material, but do want to point up the fallacy in repeating interesting reports without also saying that they are based on hearsay or whatever other source one has. By giving leads by way of references we have the opportunity of encouraging additional study on the part of the reader. Eventually, some of such study may result in the discovery of useful information for our use and which may be published in the newsletter.

This past spring I have at last commenced to make a roster of all my peony plants, giving each an identification number. So far all those which have been secured from others and seedlings which have flowered are listed. Before fall I hope to have numbered all of the two year old seedlings, those which have survived at least one winter.

Don Hollingsworth

A LETTER TO:

July 17, 1972

Dr. Henry Tod
Carnethy, Seafield, Boslin
Mid Lothian, Scotland

Dear Sir:

Just a little over a year ago you donated seeds to the American Peony Society. These seeds were sold at an auction for the benefit of the Society, We certainly want to thank you for your gift!

Your seeds have germinated, the plants are growing nicely, and now some of us are wondering what we have got. Our guess is that these giant seeds were P. lutea ludlowii —is that right?

Being editor of a newsletter called "Paeonia", I was wondering if you could (or would) write an article of your own choosing about peonies to be used in "Paeonia".

Yours sincerely,

/s/ Chris Laning

HIS REPLY:

July 25, 1972

Dear Chris Laning,

Thank you for your letter about the peony seeds — they were, as you thought, lutea ludlowii. I am glad to hear they have germinated well and if your members would like to try seeds of the cross I mention in the note for "Paeonia" which I enclose, I'll be delighted to send them to you as soon as they ripen — also more ludlowii if it is wanted. The seed from the cross plants is of course, a "lucky dip" for all my peonies are open-pollinated as we have bees so anything can happen!

Yours sincerely,

/s/ Henry Tod

# PEONIES IN A SCOTTISH GARDEN

Henry Tod Ph.D.

I have been very fond of peonies since, at the age of four I rather shattered my parents by carefully cutting every bloom, buds and all, from a huge old plant of *P. officinalis* and presenting the resulting bouquet, which I could barely manage to carry, to my mother.

When, some twenty-five years later, I got a garden of my own, I picked up two roots in our equivalent of the "five-and-ten-cent store" and those which came back with me to my childhood's garden where I now live, turned out to be really good "singles", one pale shell-pink and the other a somewhat deeper shade. Owing to changes in the layout of the garden, the big old plant, divided up, and some smaller ones have given me a bed about thirty feet long by six feet deep of herbaceous peonies which makes a really magnificent show each year.

In the years after the war I started raising from seed and got one under the dubious name of "*tenuifolia*" which is, I think, *woodwardii*. It forms a fairly low-growing clump of finely cut foliage with strong pink single flowers, but only increases very slowly and sets no seed. From the seed exchange of the Scottish Rock Garden Club I got seed of a cross between the unpronounceable *mlokosewitschii* and *delavayi* and this gave me two very different plants, both of the "tree peony" type. One is about four feet tall by five across with flowers of maroon, liberally splashed with yellow while the other is perhaps a foot lower and has only yellow blooms. Both flower and seed freely, but just how their offspring turn out I do not know.

Among the seeds that I got in the 'fifties from the Ludlow and Sherriff collecting expedition in Bhutan was *Paeonia lutea ludlowii*, of which I raised one seedling. This is now about eight feet or so tall, by eight or ten feet across, a huge, rather gaunt shrub which each year covers its upper parts with big yellow blooms and then sets masses of seed. The flowering period is not particularly long, but fortunately the deeply-cut foliage is handsome in itself. It is, incidentally, growing in the poorest imaginable soil for it is on top of what used to be an ash-covered entrance drive until we moved the drive to avoid an almost unmanageable corner.

Within the last few years I have bought a number of named varieties of tree peonies but it is early days to say how they are going to do. My garden is normally rather a damp one and peony botrytis tends to be a problem, but I am told that the fairly new systemic fungicide benomyl (Benlate) is of value for this.

One rather odd thing has occurred in my garden. *P. cambessedesii* is regarded in this part of the world as being definitely frost-tender, yet I have had it growing and flowering in my rock garden for eight years or so, and without any protection at all. It has not increased appreciably in size, but it is still alive and healthy.

I have tried repeatedly to raise the lovely *P. obovata* alba but quite without success — perhaps some day I will be lucky! Peonies are a family I would never be without but, as will be realized, I am very far from being an expert on the genus.

## BENLATE (BENOMYL)

It was a disappointment this summer to discover that about one-third of my "Ito type" hybrids seem particularly subject to attack by fungus, They have brown spots with lighter, orangey centers. Some others are entirely unaffected.

Quite a bit has already been reported about favorable results from the use of Benlate as a systemic fungicide. Whether or not it has yet been used on peonies, I do not know, but thought I would give it a small try.

I have a number of plants of the lactiflora '**Vista**' which is particularly subject to fungus attack in late summer. This should be a very good subject for a test. I'm spraying two plants weekly and leaving the others unsprayed for controls. This was started the first week in July when the plants were already somewhat infected. If, by September, I can see any marked difference in these plants, I'll report the fact.

I'm going to destroy my plants of '**Vista**'. Most of its seedlings are also very susceptible so I don't want to use it in breeding any longer. When possible we should avoid using any varieties but those which seem to be fungus-resistant.

Some experiments being conducted in Wisconsin suggest very strongly that elm trees already showing evidence of infection with Dutch Elm Disease can be saved by either injection or foliar spray, using Benlate. The June, 1972, issue of Weeds, Trees and Turf contains an article on this subject.

Benlate is insoluble in water so a spray consists of only a suspension of small particles in water. The amounts absorbed into the circulatory system of a plant must therefore be very small indeed. Apparently only an infinitesimal amount of Benlate needs to be absorbed to be effective.

- Roy Pehrson

## THE COLOR PRINT

Roy Pehrson, August 30. 1972.

This is enclosed (my compliments ) with the thought that it may serve as an incentive to hybridizers who hope to get herbaceous yellows. It can happen in a cross where it may not be expected.

The cross was Quad F2 (off white) x '**Moonrise**' F2 (pink). Both parent plants had been obtained from Miss Saunders. There were about 20 plants in this group, first blooming in 1971. Most of them were near-white, several were light pink and one other was a very pale yellow.

The plant is of medium height, with good stems. These are not quite as rigidly upright as '**Moonrise**'. The first blooms are about '**Moonrise**' size and of similarly heavy substance. It is a satisfactory seed maker, making pods of medium size.

The color as I see it is exactly the same as that of my plant of Mloko. Color pictures of these two also look the same. The color rendition in this picture is too intensely yellow to portray it fairly, but it is distinctly yellow.

I do not intend to request registration of this seedling. I believe that any peony to be worthy of introduction should have real good foliage. The foliage of this one becomes quite shabby in late summer. (Registered as '**Roy Pehrson's Best Yellow**' by Chris Laning in 1982.)

I should say that this plant is only a forerunner of many yellows yet to come. You hybridizers will bring this about. It has previously been suggested that yellow color might possibly be recovered from the use of either Mloko or lobata bloodlines. This seedling combines both these bloodlines.

Did you read David Reath's comments in his latest catalog? He has a yellow too and from somewhat similar breeding.

Mr. Cooper has explained the nature of the yellow dye present in Mloko and in lobata and declared that significantly deeper yellow tones are not likely to be obtained from their use. The "Ito" cross will supply these. This light yellow is very pretty too and we can use both kinds of hybrids.

This kind of crossing can possibly produce some "bonus" colors too. If various doses of red should combine with this yellow we might get warm pinks, salmons, scarlets, and possibly some "orangey" tones.

I think that the future for peony hybridizing looks very exciting. Don't you agree?

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## PROPAGATING TREE PEONIES FROM SEED

As early in the fall as possible obtain seeds for planting. Seeds saved from the previous year should have been planted in June or July. In either case, freezing will be detrimental, killing most seeds in the early rooting stages, so protection is necessary. Try this method:

1. Prepare soil bed beforehand.
2. At proper time sow seeds — not over one inch deep.
3. When protecting seeds from freezing in late fall, lay a thermometer on the surface somewhere in the row, cover (or mulch) with 2 or 3 inches of vermiculite or zonolite insulation.
4. Lay heating coil on top of this insulation.
1. 5- Cover with plastic (polyethylene) which is 3-4 feet wide.
5. Over this place 3-4 inches of sawdust or wood shavings (or vermiculite).
6. Finish the job with a final covering of plastic (3-4 feet wide) and secure the edges.

Do you get it? Let's review —

1. Plant seeds 1 inch deep.
2. Thermometer placed on soil for temperature check.
3. Three inches of insulation.
4. Heating coil laid length of row on vermiculite.
5. Polyethylene cover.
6. More insulation (sawdust is OK).
7. Final covering with plastic.

If an inside-outside thermometer is used, a quick check is possible. Also for the records, day to day temperatures can be noted — both of the seed bed and outdoors. When temperature of seed bed drops to 35 to 40 °F, turn on the electric heating cable. Maintain above freezing temperatures at all times, but not too high.

In spring, depending upon the weather, about March 15 in Michigan, remove top sheet of plastic (save it), then remove sawdust, leaving the rest of the covering in place. When exceptionally cold nights arrive, turn on heating coil. In April when warm weather arrives or when T.P.'s begin to appear above ground under vermiculite, remove plastic (but leave the vermiculite in place — it is a good mulch that will retard plant growth — which is good.) All the rest of the garden is hard and frozen in winter but under this protection the ground remains soft. That means a haven for mice and moles which will do damage to your planting. If you solve this problem by another method than wire screening, let me know.

This process should be used the following year (October) again because some seeds take two years to germinate. Do not fail to report to me your results!

Prices of heating cables as found in Park's Flower Book of 1972 are as follows:

| | | | | |
|---|---|---|---|---|
| 6067 | 42 watts | 12 ft. long | heats 4 sq. ft. | $4.25 |
| 6068 | 84 watts | 24 ft. long | heats 8 sq. ft. | $5.25 |
| 6060 | 126 watts | 36 ft. long | heats 12 sq. ft. | $5.75 |
| 6061 | 168 watts | 48 ft. long | heats 18 sq. ft. | $6.75 |
| 6053 | 210 watts | 60 ft. long | heats 20 sq. ft. | $8.35 |
| 6054 | 280 watts | 80 ft. long | heats 28 sq. ft. | $9.40 |
| 6063 | 350 watts | 100 ft. long | heats 36 sq. ft. | $10.45 |
| 6064 | 420 watts | 120 ft. long | heats 45 sq. ft. | $11.95 |

If you can't find a heating coil locally, get it from Geo. W. Park's Seed Co., Inc., Greenwood, S.C., 29646.

- Chris Laning

P.S. Any suggestion you may have will be appreciated.

## PLASTIC COVERED "A" FRAME

Which one of us doesn't have the desire to own a greenhouse? Many problems might be solved if each of us had the use of such a facility. But we who don't own one may be able to make use of a plastic covered "A" frame. I would recommend your building a small one this fall just to see what it has to offer. Let me suggest some advantages to be gained by its use. It could act as a cold frame thereby advancing the peony season. It could act as a sun house and a protector of valuable plants. If heat could be added, a temporary greenhouse would be obtained. But best of all the plastic protection would certainly end weather vagaries when seedling propagation is done by Roy Pehrson's method. Setting out pre-germinated seeds in nasty spring weather must be a miserable chore. Underneath a plastic tent even in inclement weather it's a pleasure; yes, and even happiness could be had. And it is easy to see that special pollen bearing peonies could be forced early enough to produce pollen for even the early Saunders hybrids.

A framework of 2 x 4' s eight feet long can be used — spaced two feet on centers to which the vinyl plastic is secured, is what I would suggest. The length of the tent would be a matter of choice and the required need. But start out with a small one lest you become discouraged in its construction.

I am wondering if by extending the growing season, tree peonies such as ludlowii could be brought into bloom, We need (or at least could be happy to use) pollen from this lovely tree peony. By the way, Leo (Mr. Leo Armatys) was '**Anne Rosse**', raised by Lord Rosse, the plant you had thought about getting and later declined? Could it be that this plant would find long enough growing season if babied in this fashion? (See footnote in THE PEONIES by Dr. John C. Wister, page 153).

Last year's (and this spring's) "A" frame covered plastic tent gave me many happy comfortable hours of gardening with my peonies. Couldn't it do the same for you? To further impress you, I would like to present an outline, the details to be supplied by you, yourself.

I. Build plastic covered "A" frame A.

Cost:

1. 2 x 4's — get price from lumber yard.
2. .004 mill plastic, 10 ft. wide and 100 ft. long, $9.25 per roll;
   16 ft. wide x 100 ft. long $14.80:
   20 ft. wide x 100 ft. long $18.50 .

NOTE: If a full roll is not wanted, cut order price is somewhat higher,

Uses:

1. Cold frame.
2. Plant protector.
3. Sun house (advances growing season).
4. Greenhouse (heat must be added).
5. Seedling propagator (Roy's method).
6. Extending growing season (for *P. ludlowii*, etc,).
7. For non-hardy plants protector .

Problems:

1. Moles and mice
2. Watering necessary if unit is kept in operation (used) quite long or late in the spring season.

II. Dismantle

Plastic probably good for one complete growing season (from early fall 'till late spring).

NOTE: Don't leave the 2 x 4's leaning against a tree like Chris did. (Lois)

You would rather use fiberglass panels?

26" x 96" - mint - white - $6.75 each.
26" x 144" - mint - white - $9.95 each.

NOTE-: Prices quoted are from Miller Lumber Co., Kalamazoo, Michigan. — Chris Laning